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THE CLINICAL SOCIETY.

VOL. II.

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CONTENTS.

PAGE

List of Officers and Members of the Council during the Session 1869 ix

List of Members of the Society xi

Balance Sheet xxv

Additional Laws of the Society xxvii

Communications:—

I. A Case of extreme Hypertrophy of the Epithelial and Papillary Elements of the Mucosa of the Tongue, Ichthyosis Glossæ, where, after nearly Twenty Years, Epithelioma supervened. By John W. Hulke . 1

II. On Ligature of the Femoral Artery (under two conditions). By Charles F. Maunder 5

III. Case of Subclavian Aneurism on the right side, in a Patient who had a cured Subclavian Aneurism on the left side. By Christopher Heath 8

IV. Cases of Ascites treated successfully with Tonics. By J. S. Bristowe 12

V. Wound of the Knee-joint followed by acute Inflammation; subsidence of the Inflammation after Ligature of the Femoral Artery; Recovery. Under the care of Mr. Little. Communicated by Charles F. Maunder 37

228171

PAGE

VI. A Case of Acute Laryngitis with Spasm of the Glottis, treated by Tracheotomy. By Alexander Bruce . 39

VII. A Case of Gun-shot Wound of the Leg; Amputation during Collapse, just below the Knee-joint; Traumatic Delirium; Fascial Abscesses of the Thigh; Recovery. By John Crouch. Communicated by Mr. Callender 43

VIII. Report of a Case of Diabetes Mellitus successfully treated by Opium without restriction of Diet. By F. W. Pavy, M.D. 44

IX. Irritative Hypertrophy of the Heart. By Thomas Henry Green, M.D. 56

X. Acute Suppuration of the Hand and Forearm treated by Acupressure of the Brachial Artery. By Charles H. Moore 61

XI. Case of Ruptured Intestine, in which the Bowel was punctured to relieve Distension. By Thomas Smith . 64

XII. A Case of Lithotomy, in which the Stone was not discovered, having probably fallen to the ground with the first gush of Urine. By T. Holmes . 67

XIII. Case of Chorea, in conjunction with Rheumatic Fever, treated with Bromide and Iodide of Potassium. By Edward Headlam Greenhow, M.D. 69

XIV. Chorea complicating Pregnancy, treated by Bromide of Ammonium and Arsenite of Potash, later by the Bromide of Ammonium only. By J. Hall Davis, M.D. 73

XV. Removal of a Solid Mass, probably a growth, from the Tympanum, by Incision of the Membrana Tympani. By James Hinton 75

XVI. A Case of Acute Rheumatism in an Epileptic, with obscuration of the first sound of the Heart. By Thomas Buzzard, M.D. 77

XVII. Cases of Syphilitic Rheumatism. By Alfred B. Duffin 81

PAGE

XVIII. Cases of Hæmoptysis, followed by inflammatory changes in the Lungs. By Christian Bäumler, M.D. 83

XIX. Large lacerated Wound on the outer side of the right Knee, laying open the Joint, and followed by Tetanus on the ninth day. By Carsten Holthouse 94

XX. Case of Subacute Traumatic Tetanus successfully treated by the Calabar Bean. By C. Holthouse . 100

XXI. On a form of Enlargement of the right Leg and Thigh, with an occasional discharge of Chylous Fluid. By W. H. Day, M.D. 104

Report on Dr. Day's Case of Discharge of Chylous Fluid 112

Appendix (A).—Note of a Case of Varicose Lymphatic Vessels of the right lower Extremity. By Berkeley Hill 114

Appendix (B).—Note of a Case of great Enlargement of the whole of the right lower Extremity, with at times a flow of milky-looking Lymph from behind the Ankle; lymphatic Engorgement. By Dr. Cholmeley 116

XXII. Case of Fatty Diarrhœa, treated by Pancreatic Extract. By Dr. Langdon Down 119

XXIII. Manganese, Nickel, and Zinc in Anæmia, Chlorosis, and associated Disorders. By William Henry Broadbent, M.D. 122

XXIV. Case of Motor Asynergy affecting chiefly the upper Extremities. By Edward Headlam Greenhow, M.D. 127

Report on Dr. Greenhow's Case of Motor Asynergy . 135

XXV. On a Case of Sub-Glossitis. By Carsten Holthouse . 140

PAGE

XXVI. On Hæmoptysis as a Cause of inflammatory Processes and Phthisis, with Remarks on Treatment. By Hermann Weber, M.D. 143

XXVII. Case of Syphilis. By Holmes Coote . . . 157

XXVIII. A Case illustrative of the Identity of the Syphilitic Virus in the hard and soft Chancre, with Remarks. By A. Myers 160

XXIX. Case of Diabetes treated by large Doses of Opium. By J. Burdon Sanderson, M.D. 163

XXX. On the Action of a New Organic Base, Apomorphia. By Samuel Gee, M.D. 166

XXXI. Case of Displacement of the Trachea from external Pressure. By Morell Mackenzie, M.D. . . 169

XXXII. Case of Suppression of Urine very slowly fatal. By James Paget 171

XXXIII. Case of Cholera treated with Saline Injection into the Veins of a lower Temperature than that of the Blood. By Charles Murchison, M.D. . . 174

XXXIV. Case of Gastro-Enteritis from local Irritants simulating Cholera on two Occasions in the same Individual. By Charles Murchison, M.D. . . 178

XXXV. Three Cases of Phthisis with contracted Lung. By R. Douglas Powell, M.D. 181

XXXVI. Statistical Analysis of Cases of Acute and Subacute Rheumatism, chiefly in reference to the Proportion of Cardiac Complications. By Thomas Bevill Peacock, M.D. 195

Index 225

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Elected

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1868 MAY, EDWARD HOOPER, M.D.: Tottenham, Middlesex.

1868 MEADOWS, ALFRED, M.D., Physician to the Hospital for Women, and Physician Accoucheur to the General Lying-in Hospital: 27 George Street, Hanover Square.

Orig Memb MOORE, CHARLES HEWETT, Surgeon to, and Lecturer on Surgery at the Middlesex Hospital, and Surgeon to St. Luke's Hospital: 102 Piccadilly.

Orig Memb MOXON, WALTER, M.D., Assistant Physician to, and Lecturer on Pathology, and Demonstrator of Morbid Anatomy at Guy's Hospital: 6 Finsbury Circus.

Orig Memb MURCHISON, CHARLES, M.D., F.R.S. (C.), Senior Physician to the London Fever Hospital; Physician to, and Lecturer on Medicine at the Middlesex Hospital: 79 Wimpole Street.

1868 MURRAY, JOHN, M.D., Medical Registrar to the Middlesex Hospital: 40 Bryanston Street.

1868 MYERS, ARTHUR BOWEN RICHARDS, Assistant Surgeon to the Coldstream Guards: Tower of London.

Orig Memb NORTON, ARTHUR TREHERNE, Assistant Surgeon to St. Mary's Hospital: 6 Wimpole Street.

Orig Memb NUNN, THOMAS WILLIAM, Surgeon to, and Lecturer on Operative Surgery at the Middlesex Hospital: 8 Stratford Place.

Orig Memb OGLE, JOHN WILLIAM, M.D., Examiner in Anatomy and Physiology to the Royal College of Physicians; Physician to, and Lecturer on Pathology at St. George's Hospital: 13 Upper Brook Street. (C. 1867–8.)

1868 OGLE, WILLIAM, M.D., Physician to the Derbyshire General Infirmary: Derby.

1869 OLDFIELD, E., M.D.: Surinam.

1868 OPPERT, FRANCIS, M.D., Senior Physician to the City Dispensary, 10 Charlotte Street, Portland Place.

Orig Memb PAGET, JAMES, F.R.S., D.C.L. (*President*), Sergeant-Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to, and Lecturer on Surgery at St. Bartholomew's Hospital, and Surgeon to Christ's Hospital: 1 Harewood Place, Hanover Square. (V.P. 1867–8.)

ELECTED

1869 PALMER, SILAS, M.D.: Newbury, Berks.

Orig Memb PARSON, EDWARD, M.D., Physician Accoucheur and Lecturer on the Diseases of Women and Children at the Charing Cross Hospital: 8 Bolton Street, Mayfair.

Orig Memb PARTRIDGE, RICHARD, F.R.S., Surgeon to King's College Hospital, and Professor of Anatomy at King's College: 17 New Street, Spring Gardens.

Orig Memb PAVY FREDERICK WILLIAM, M.D., F.R.S. (C.), Assistant Physician to, and Lecturer on Physiology at Guy's Hospital: 35 Grosvenor Street.

Orig Memb PEACOCK, THOMAS BEVILL, M.D. (V.P.), Physician to St. Thomas's Hospital, and to the City of London Hospital for Diseases of the Chest: 20 Finsbury Circus. (C. 1867–8.)

Orig Memb PICK, THOMAS PICKERING, Surgeon to the Belgrave Hospital for Children; Curator of the Museum at St. George's Hospital: 9 Bolton Row, Mayfair.

Orig Memb POLLOCK, A. JULIUS, M.D., Assistant Physician to the Charing Cross Hospital; Physician to the Foundling Hospital: 21 Montague Place, Russell Square.

1868 POLLOCK, JAMES EDWARD, M.D., Physician to the Hospital for Consumption and Diseases of the Chest: 52 Upper Brook Street.

Orig Memb POWELL, R. DOUGLAS, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 6 Nottingham Place.

1868 PRENTIS, CHARLES, Assistant Surgeon Bengal Army: 11 Upper Phillimore Place, Kensington.

1868 PURNELL, JOHN J., Surgeon to the Royal General Dispensary: Woodlands, Streatham Hill.

Orig Memb QUAIN, RICHARD, M.D. (C.), Physician to the Hospital for Consumption and Diseases of the Chest: 67 Harley Street.

Orig Memb RAMSKILL, J. SPENCE, M.D., Physician to, and Lecturer on Medicine at the London Hospital; Senior Physician to the National Hospital for the Paralysed and Epileptic: 5 St. Helen's Place.

1868 RASCH, ADOLPHUS A., M.D., Honorary Physician to the German Hospital Eastern Dispensary: 7 South Street, Finsbury Square.

Orig Memb REES, GEORGE OWEN, M.D., F.R.S., Senior Physician to, and Lecturer on Medicine at Guy's Hospital: 26 Albemarle Street.

Elected	
1868	Reeves, Henry A., Surgeon to the Westminster General Dispensary; Demonstrator of Anatomy at the Middlesex Hospital: 36 Gordon Square.
1868	Rendle, James D., M.D. (C.), Medical Officer to the Government Convict Prison, Brixton: Park Hill, Clapham Park.
Orig Memb	Reynolds, John Russell, M.D., F.R.S., Examiner in Medicine at the University of London; Professor of the Principles and Practice of Medicine in University College; Physician to University College Hospital: 38 Grosvenor Street. (C. 1867–8.)
1868	Rice, Michael W., M.B.: 90 Cadogan Place.
Orig Memb	Ringer, Sydney, M.D., Professor of Materia Medica in University College, and Physician to University College Hospital; Assistant Physician to the Hospital for Sick Children: 15 Cavendish Place.
Orig Memb	Rouse, James, Assistant Surgeon to St. George's Hospital, and to the Royal Ophthalmic Hospital, Charing Cross; Lecturer on Anatomy at St. George's Hospital: 2 Wilton Street, Grosvenor Place.
Orig Memb	Salter, Henry Hyde, M.D., F.R.S., Examiner in Anatomy and Physiology to the Royal College of Physicians; Senior Physician to, and Lecturer on Medicine at the Charing Cross Hospital: 14 Harley Street.
Orig Memb	Sanderson, John Burdon, M.D., F.R.S. (*Hon. Secretary*); Assistant Physician to, and Lecturer on Physiology at the Middlesex Hospital; Physician to the Hospital for Consumption and Diseases of the Chest: 49 Queen Anne Street.
1868	Sanderson, Hugh James, M.D., Physician to the Hospital for Women: 26 Upper Berkeley Street.
1869	Sedgwick, Leonard William, M.D.: 2 Gloucester Terrace, Hyde Park.
Orig Memb	Shaw, Alexander, Consulting Surgeon to the Middlesex Hospital: 40 Abbey Road West, Kilburn.
Orig Memb	Sibley, Septimus William, Lecturer on Pathological Anatomy at the Middlesex Hospital: 12 New Burlington Street.
Orig Memb	Sibson, Francis, M.D., F.R.S. (C.), Physician to, and Lecturer on Clinical Medicine at St. Mary's Hospital: 59 Brook Street.
Orig Memb	Sieveking, Edward Henry, M.D., Physician in Ordinary to H.R.H. the Prince of Wales; Physician to, and Lecturer on Materia Medica at St. Mary's Hospital; Physician to the Lock Hospital: 17 Manchester Square.

ELECTED

1868 SILVER, ALEXANDER, M.D., Assistant Physician to, and Lecturer on Forensic Medicine at the Charing Cross Hospital: 8 Gray's Inn Place.

1868 SIMMS, FREDERICK, M.B., Physician to the St. Pancras and Northern Dispensary: 46 Wimpole Street.

Orig Memb SIMON, JOHN, F.R.S., D.C.L. (V.P.), Surgeon to, and Lecturer on Pathology at St. Thomas's Hospital; Medical Officer of H.M. Most Honourable Privy Council: 40 Kensington Square.

1868 SMITH, HEYWOOD, M.B., Assistant Physician to the Hospital for Women: 42 Park Street, Grosvenor Square.

1868 SMITH, PROTHEROE, M.D., Physician to the Hospital for Women: 42 Park Street, Grosvenor Square.

Orig Memb SMITH, THOMAS (C.), Assistant Surgeon to St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children: 5 Stratford Place.

1868 SNOW, WILLIAM V., M.D.: Eastbourne.

Orig Memb SOUTHEY, REGINALD, M.D. (C.), Assistant Physician to, and Lecturer on Forensic Medicine at St. Bartholomew's Hospital: 32 Montague Place, Russell Square.

1868 SQUAREY, CHARLES EDWARD, M.B., Assistant Physician to the Hospital for Women: Upper Wimpole Street.

Orig Memb STEPHEN, ANDREW, M.D.: 44 Victoria Road, Kensington.

Orig Memb STEWART, ALEXANDER PATRICK, M.D., Consulting Physician to the Middlesex Hospital: 75 Grosvenor Street.

1868 SUTRO, SIGISMUND, M.D., Senior Physician to the German Hospital: 37A Finsbury Square.

Orig Memb SUTTON, HENRY GAWEN, M.B., Assistant Physician to, and Lecturer on Pathology at the London Hospital, and Assistant Physician to the City of London Hospital for Diseases of the Chest: 30 Finsbury Square.

1868 TANNER, THOMAS HAWKES, M.D., F.L.S.: 9 Henrietta Street, Cavendish Square.

1868 TATHAM, JOHN, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 1 Wilton Place.

Orig Memb TEEVAN, WILLIAM F., Surgeon to the West London Hospital: 10 Portman Square.

Orig Memb THOMPSON, EDMUND SYMES, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest; Gresham Professor of Medicine: 3 Upper George Street, Portman Square.

ELECTED

Orig Memb THOMPSON, Sir HENRY, Knt., Surgeon Extraordinary to H.M. the King of the Belgians; Professor of Clinical Surgery in University College, and Surgeon to University College Hospital: 35 Wimpole Street. (C. 1867–8.)

Orig Memb THOMPSON, HENRY, M.D., Fellow of St. John's College, Cambridge; Physician to the Middlesex Hospital: 52 Welbeck Street.

1868 THOROWGOOD, JOHN C., M.D., Assistant Physician to the City of London Hospital for Diseases of the Chest: 61 Welbeck Street.

1868 VENNING, EDGCOMBE, Assistant Surgeon 1st Life Guards: 24 Belgrave Square.

1869 VERNON, BOWATER J.: 93 Wimpole Street.

1868 VINEN, EDWARD HART, M.D., F.L.S.: 17 Chepstow Villas, Bayswater.

1868 WAGSTAFFE, WILLIAM WARWICK, Demonstrator of Anatomy and Surgical Registrar to St. Thomas's Hospital: 10 Walcot Place, Kennington.

1869 WALKER, JOSEPH, Dental Surgeon to the Westminster Hospital: 22 Grosvenor Street.

1868 WARD, STEPHEN H., M.D., Physician to the Seamen's Hospital Ship Dreadnought, and to the City of London Hospital for Diseases of the Chest: 28 Finsbury Circus.

1868 WARWICK, WILLIAM R., M.D.: Southend, Essex.

1868 WATKINS, EDWIN T., M.D.: 61 Guildford Street.

Orig Memb WATSON, Sir THOMAS, Bart., M.D., D.C.L., L.L.D., F.R.S., Physician Extraordinary to H.M. the Queen; Consulting Physician to King's College Hospital: 16 Henrietta Street, Cavendish Square. (*President* 1867–8.)

Orig Memb WATSON, WILLIAM SPENCER, M.B., Assistant Surgeon to the Central London Ophthalmic Hospital: 27 Montague Street, Russell Square.

Orig Memb WEBER, HERMANN, M.D. (C.), Physician to the German Hospital: 10 Grosvenor Street.

1868 WELLS, THOMAS SPENCER, Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital: 3 Upper Grosvenor Street.

1868 WHIPHAM, THOMAS TILLYER, M.B., Demonstrator of Anatomy at St. George's Hospital: 14 Queen Street, Mayfair.

Orig Memb WILKS, SAMUEL, M.D., Examiner in Medicine at the University of London; Physician to, and Lecturer on Medicine at Guy's Hospital: 77 Grosvenor Street.

Elected	
Orig Memb	Willett, Alfred, Assistant Surgeon and Surgical Registrar to St. Bartholomew's Hospital: 36 Wimpole Street.
Orig Memb	Williams, Charles James Blasius, M.D., F.R.S. (V.P.), Consulting Physician to the Hospital for Consumption and Diseases of the Chest: 49 Upper Brook Street.
Orig Memb	Williams, Charles Theodore, M.B., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 78 Park Street, Grosvenor Square.
Orig Memb	Willis, Francis, M.D.: Braceborough, Stamford.
1868	Wiltshire, Alfred, M.D., Medical Inspector to H.M. Privy Council: 8 Richmond Terrace, Whitehall.
1869	Wolff, Abraham, Surgeon to the Spanish Jews' Hospital: 66 Gower Street.
1869	Wyatt, John, Surgeon-Major, Coldstream Guards: 76 Cadogan Place.

CLINICAL SOCIETY OF LONDON.—BALANCE SHEET 1867–8.

1868		£	s.	d.	1868		£	s.	d.
	Subscriptions received	195	6	0		Preliminary expenses	5	19	6
						Minute, cash, and receipt books . . .	4	18	9
						Cost of printing, binding and delivering first vol. of Transactions	84	4	0
						Refreshments at meetings	16	13	0
						Printing, stationery, postages, and petty expenses	7	1	8
						Cost of copying reports of debates for medical journals	2	5	0
						Cost of collecting arrears of subscriptions .	1	0	0
							122	1	11
	Unpaid arrears of subscriptions £6 6s.					Balance due to Society	73	4	1
		195	6	0			195	6	0

E. HEADLAM GREENHOW,
Treasurer.

Audited and found correct, December 8, 1868.
DYCE DUCKWORTH.
HENRY ARNOTT.
J. B. SANDERSON, *Hon. Sec.*

Additional Laws adopted at the Annual Meeting of the Clinical Society, January 8, 1868.

I. Ordinary members, residing more than six miles from Charing Cross at the time of their election, shall pay an entrance fee of two guineas, which shall exempt them from any further payment while they continue non-resident.

II. Ordinary resident members, on becoming non-resident, shall cease to be called on for the annual contribution whilst they continue non-resident.

III. Non-resident members shall not be presented with the Transactions of the Society, but shall be entitled to purchase them at prime cost.

IV. Ordinary members of the Society may compound for the entrance fee and annual subscription for life by a single payment of fifteen guineas made in advance.

COMMUNICATIONS.

I.—*A Case of extreme Hypertrophy of the Epithelial and Papillary Elements of the Mucosa of the Tongue, Ichthyosis Glossæ, where, after nearly twenty years, Epithelioma supervened.* By JOHN W. HULKE. *Read October* 9, 1868.

IN presenting this case to the Clinical Society, it is necessary that I should at once mention that, under the title 'A case of Ichthyosis Glossæ,' it formed in 1864 the subject of a communication to the Royal Medical and Chirurgical Society, by the Council of which it was returned to me as unsuitable for publication in their 'Transactions,' although the disease is very uncommon, and as far as could be learned it had not been previously described.

The case has since then acquired increased interest from the supervention of epithelioma, which ran a rapidly fatal course.

The affection of the tongue, to which in 1864 I provisionally applied the term ichthyosis, consists essentially in hypertrophy of the epithelial and papillary elements of the glossal mucous membrane, corresponding to that which in the skin dermatologists have long known by the same name. Its rarity may be inferred from the fact that, during the twelve years I have had charge of a large out-patient practice at two considerable metropolitan hospitals I had only seen this one case until a few days ago, when Mr. Moore drew my attention to a patient of his similarly affected with both ichthyosis and epithelioma of the tongue, the former of many years' duration, the latter of recent date.

Ichthyosis is characterised by tough, white, raised patches on the surface of the tongue. Their colour is not unlike that of a thin film of boiled white of egg or wet kid leather.

They are clinically distinguishable from syphilitic condylomata by their thick epithelium and their wide superficial extent; and from syphilitic nodes and cancerous tumours by their restriction to the mucosa, by their exact circumscription, by the natural softness of the underlying muscular tissue (showing the absence of infiltration), and by the absence of ulceration and of infection of the lymphatics.

Case.—An athletic fireman, aged 43, came to my out-patient room in King's College Hospital, in February 1861, with the following curious condition of tongue: Upon the middle of its upper surface there was an oblong, yellowish white, leathery patch about $1\frac{1}{2}'''$ thick at its centre, but thinner towards the left side of the tongue, where it was not unlike the thinnest kid leather. A little behind the left corner of this patch was a more prominent round spot of the same kind about $\frac{1}{2}'''$ broad. These patches were accurately circumscribed: the underlying muscular tissue was not indurated, and no enlarged glands were perceptible.

He said that twelve or fourteen years before the skin on the back of his tongue began to thicken, and a raised patch was formed here which slowly grew thicker and larger until it became so very inconvenient that he pared it down with a razor; and he had since repeated this from time to time whenever the patch became troublesome by its bulk and its inflexibility. He said that he had never had syphilis, and a careful investigation on this and on several subsequent occasions failed to detect any evidence of it.

Regarding it as a non-malignant affection of the nature of a wart or corn, I cut off the smaller patch together with a thin layer of the underlying muscle. The wound bled very copiously. It healed in about ten days. A memorandum which I made at the time says: 'The wart is $3'''$ thick at the centre and $1\frac{1}{2}'''$ at the edge. It consists of the natural elements of the mucous membrane greatly hypertrophied. The papillæ and their epithelial sheaths are both involved.'

Three years afterwards he again came to me, now at the Middlesex Hospital. At this time the considerable portion of the surface of the tongue represented in the drawing was involved in the hypertrophy, which presented the same characters as before, and there was still no induration of the muscular tissue, no ulceration, and no enlargement of the neighbouring lymphatic glands. The scar of the former operation was not perceptible. The two principal masses shown in the drawing annoyed him so much that he consented to have

them taken away. I tried to do this with potassa fusa, strong nitric and chromic acid, but these powerful chemical agents did not make any impression on the tough leathery plaques, and on April 20, 1864, I excised the larger one. Remembering the copious hæmorrhage when I cut off a much smaller piece in 1861, I now used the écraseur. The extent of tissue included in the chain was easily regulated by stout pins passed under the plaque, and the surface of the wound was even and bloodless. The patient, who had declined to take chloroform, suffered such torture during the écrasement, which occupied several minutes, that, although a man of great courage, he begged me to defer the removal of the second patch. The wound healed as kindly as that which had been made with the knife.

On the 15th of the following May I cut off the raised round patch on the left half of the back of the tongue with a scalpel, because he still refused chloroform, and he shrank from the slower action of the écraseur. This time he lost so much blood that he fainted, and he remained very blanched for several days. In November of the same year, when I again saw him, the scars were soft and inconspicuous. The very thin white leathery film on the left side of the tip of the tongue had nearly disappeared, and a single opaque white spot $\frac{1}{4}$ of an inch behind the right scar, about 3‴ broad, was almost the only vestige of the disease then remaining.

The excised plaques had essentially the same structure as that removed in 1861, viz. extreme hypertrophy of the filiform papillæ and their sheaths. These composite papillæ had an average diameter of ·1 inch at their base, and the average length of ·25 of an inch. The epithelial sheaths of the secondary papillæ, instead of ending separately in brushes, cohered in solid masses. The outer surface was coated with the filamentous thallus of an alga which had insinuated itself beneath the most superficial epithelial flakes, and had also crept into the fissures between the papillæ, but it did not penetrate the sheath to any depth, and it never reached the growing layers of the epithelium.

I did not see him again until December 1867, nearly six years after the first, and three and a half years after the second operation. He now had a ragged ulcer with a raised margin, and a thickened base on the back of the tongue near the tip. Its surface was foul and ichorous, and it was excessively painful. He had just returned from Paris, where

a few weeks previously he first noticed a hard knot in the tip of the tongue, and he said that a French doctor to whom he showed it stuck a caustic flèche into it, which was followed quickly by its breaking into an ulcer.

There was no recurrence of the former hypertrophy of the mucous membrane. The present disease was manifestly an ulcerated epithelioma, and as the induration appeared restricted to the front of the tongue, and as the neighbouring lymphatic glands were not yet enlarged, I advised its removal with the écraseur. This was done on December 4, the patient this time being under the influence of chloroform. A wide belt of soft, seemingly healthy tissue beyond the hardened part was included in the chain. On the separation of the tongue three arteries bled very freely, and required ligatures.* Healthy granulations sprang up and the wound healed quickly. At the end of December he left the hospital with a soft healthy scar. The distinctness of his speech was not much lessened, the chief defect being a lisp.

On the 10th of the following January, I found a very hard lymphatic gland of the size of a bean at the angle of the jaw on the left side, evidently cancerously infected. I injected it with ℥xx. of a solution of acetic acid containing 25 per cent. of strong acid. This was horribly painful, and it did not check the extension of the cancerous infiltration. Other neighbouring glands about the floor of the mouth were soon invaded, and then those in the neck on both sides became involved. At the same time a large mass rose up under the mucous membrane in the floor of the mouth, between the stump of the tongue and the symphysis of the jaw. It reached above the level of the lower teeth, and was deeply indented by those of the upper jaw. The cicatrix in the tongue remained soft and apparently healthy.

June 10, 1868, when I last saw him, he was in excruciating pain, notwithstanding the free use of opium, and death was evidently near.

The clinical history of the case is unfortunately deficient in evidence which might establish the existence or absence of any direct or indirect causal relation subsisting between the ichthyosis and the epithelioma, for the patient not being under our observation at the time when he first noticed the

* This probably arose from the chain cutting too quickly. I became aware of it during the operation and turned the screw very slowly. The instrument was new, and I afterwards found that the screw had an unusually wide thread.

cancerous knot, we cannot prove or disprove its origin in any vestige of an ichthyosis patch.

The long duration of the ichthyosis as such, the complete restriction of the hypertrophy to the elementary tissues of the mucosa during twenty years, and the evident retrogression of the remaining vestige of it in 1864, favour the idea that the two affections occurred independently; and this is supported by the anatomical relations of the cancerous tumour, which in a longitudinal section of the tongue in the median plane, appears to the naked eye as a round nodule embedded in the muscular tissue, the coarser fasciculi of which are disposed concentrically about it. On the other hand, the final supervention of epithelioma in the only two cases of ichthyosis glossæ which I have seen, and the anatomical parallelism presented by the very active multiplication of cells of an epithelial type in both diseases are not without significance. The fine structure of the tumour and its growth are eminently typical of epithelioma and therefore require no description.

II.—*On Ligature of the Femoral Artery (under two conditions).* By CHARLES F. MAUNDER. *Read October* 23, 1868.

R. P., aged 19, while mending a pen, on September 7, 1867, accidentally wounded his left thigh. Profuse hæmorrhage arose, and was temporarily arrested by a handkerchief tied tightly around the limb over the wound. Within a few minutes of the accident I was summoned, and having carried my finger along the track of the knife, felt a hole in an artery (which proved to be the superficial femoral) wounded about the middle of the thigh.

Having enlarged the wound upwards and downwards, I exposed a large artery and vein, and distinctly saw (as also did Dr. W. R. Woodman, who assisted me) a gaping wound in the inner side of the former. A ligature was carried around the artery both above and below the wound in it, and the patient was out of danger.

During the performance of the operation, the finger became shifted occasionally, and when the hole in the artery was exposed and pressure only remained below it, arterial blood

flowed; but when the pressure was only applied above it, venous blood flowed.

Of the accuracy of this observation I have not a shadow of a doubt. The ligatures came away on the twelfth and thirteenth days respectively, and the patient progressed unremittingly to recovery.

Now, I have brought this case before the Society with the view of promoting a discussion upon two points of great import in surgery, and also with a hope of establishing both an absolute fact and a probability.

The *fact* which I wish to establish is, that the femoral artery having been opened in its continuity, and the normal circulation through it being checked, dark blood shall flow from its distal portion during at least the first hour after the lesion. Such was the case in the above instance, and a similar fact as regards colour has been recorded by Guthrie. I am led to make this statement, because on a former occasion when a Member related to the Society an interesting case of aneurism of the femoral artery, treated by laying open the sac and securing both ends of the vessel, I took the opportunity (at the same time mentioning Guthrie's and my observation) of enquiring into the colour of the blood seen by that gentleman to come from the lower end of the artery. He replied, 'Guthrie was wrong in his observation, as the blood was decidedly arterial.'

Now, I venture to assert that Guthrie and myself on the one hand, and a Member on the other hand, are both correct. In the instance of wound of the superficial femoral artery, in which either a ligature has been applied to the proximal side, or pressure to arrest hæmorrhage has stopped the flow of blood along the main channel, the vis à tergo is withdrawn in great measure, and the collateral circulation, though sufficient to support the life of the limb, is unequal to do its part to propel the venous blood; and consequently, as no vacuum may exist in the arterial system, venous blood regurgitates. Thus, I presume, is explained the phenomenon of dark blood pouring from the distal portion of a wounded or opened artery. On the other hand, in the case of aneurism, the arterial supply to the limb through the chief vessel has been more or less imperfect, and the longer the disease has existed the greater the imperfection. But, to compensate for this irregularity, the collateral circulation becomes established, and the limb is more or less independent of the main vessel for its supply of arterial blood. And so, when this

is ligatured, the vis à tergo acts through the smaller but now enlarged arteries, and does its part through these in helping the venous blood towards the heart, and no regurgitation can take place. That is to say, an arterial circle has been formed around the aneurism by a free anastomosis of arteries passing off both above and below the lesion. By this means arterial blood at once finds its way into the main vessel below the aneurism. In this way I account for the difference in the colour of the blood observed by the operator referred to and myself.

At first sight it might appear to be of little moment what is the colour of the blood; but, practically, in conjunction with secondary hæmorrhage after ligature of an artery, it is significant. Venous blood flowing at the seat of ligature would suggest that the lower end of the artery had opened, and would occasion little anxiety, as pressure would probably be an all-sufficient remedy; but arterial hæmorrhage at the seat of ligature would occasion great anxiety, indicating, as it would, that the proximal end of the artery was open, and might require a second and more formidable operation for its arrest. The period at which, after occlusion of the superficial femoral artery, the balance of the circulation would be restored I am unable to state. It would depend on various circumstances, as the age of the patient, condition of arterial coats, and of heart, &c., but would scarcely be attained before the usual time of separation of a ligature; say, not before the twelfth day, probably much later.

The *probability* which I wish to establish is, that ligature of the superficial femoral artery is not so severe, so fraught with danger, as is usually supposed. The general belief that ligature of this vessel is highly likely to be followed either by gangrene of the limb or by secondary hæmorrhage is derived from the observation, for the most part, of cases of aneurism, the subjects of which are therefore known to be in an unhealthy condition, and therefore unfavourable to the repair of wounds.

Taking ligature of this artery for all causes as collected by Norris, 25 per cent. die, and of these 11·5 per cent. succumb to gangrene, and 4 per cent. to hæmorrhage, the rest dying (in cases of aneurism) from sloughing of the sac and accidental causes common to all operations—as tetanus, hectic, pyæmia, &c. Granting, then, that 15 per cent. of cases in which this vessel (in most instances was tied for aneurism) died of gangrene and hæmorrhage, would it not

be fair to expect that a much smaller mortality might be reckoned upon in instances in which the artery is tied for accidental wound?

The above case is an example of the freedom from danger with which a superficial femoral artery, in a subject not actually known to have diseased vessels, may be tied; and if in this case, why not in the following and similar instances, although for a novel purpose—namely, to arrest inflammation. Last year a man, thirty-three years of age, sustained a lacerated wound, laying open his knee-joint. After the lapse of a few days, acute inflammation within and without the joint, up the thigh and down the leg, supervened, and this was attended by symptoms of acute inflammatory fever —hot skin, quick pulse, severe pain, loss of appetite and of sleep, &c., &c. To arrest the inflammatory action, I suggested that the superficial femoral artery should be tied. It was ligatured by Mr. Little at the apex of Scarpa's triangle, and from that very moment the threatening symptoms, both local and general, began steadily to subside, and the patient's limb and life were quickly out of danger. I am of opinion that, in cases of wound of the knee-joint attended by alarming symptoms, and such as have been known to destroy the usefulness of the limb often, to lead to amputation frequently, and to destroy life occasionally, the superficial femoral artery should be tied as a means of cure.*

III.—*Case of Subclavian Aneurism on the right side, in a Patient who had a cured Subclavian Aneurism on the left side.* By CHRISTOPHER HEATH. *Read November* 13, 1868.

FRANCIS RUMMINGS, aged 52, a rope-maker, of Biggleswade, was admitted into University College Hospital under my care on July 30, 1868.

The patient says that he always had good health until about four years ago, when he suffered from what he calls rheumatic pains in the shoulders. He continued his work as a rope-maker for six months, suffering a good deal of pain in the left shoulder; but becoming unable to do his work, he went into the Queen's Hospital at Birmingham, under the care of Mr. Gamgee. There was at this time, as Mr.

* The subjects of these operations were exhibited.

Gamgee informs me, an aneurism of the left subclavian artery of considerable size, by which the clavicle was thrust forward. During his stay in the hospital dietetic and medicinal treatment was adopted, and the left arm, which was much wasted, was twice galvanised. He remained in the hospital nine weeks without deriving relief, and then left it for six months, after which he was again admitted for some weeks, during which period spontaneous cure of the aneurism occurred, without any mechanical treatment.

After this he returned to his old employment for sixteen months, using however the right arm almost entirely for the purpose of drawing out the hemp. He suffered from pain and loss of power in the right arm during this time, and was obliged to give up work six weeks before admission to the hospital, since which date he had been in the Biggleswade Union.

On Admission.—There was a pulsating swelling of the size of a hen's egg above the right clavicle, extending from the outer edge of the sterno mastoid for about $2\frac{1}{2}$ inches, and reaching to $1\frac{1}{2}$ inch above the clavicle. There was a distensile impulse corresponding to the heart's systole, but no bruit. The patient complained of pain in the part, coming on at intervals, and extending to the tips of the right fingers.

On the left side the inner half of the clavicle was bowed forward, and the bone appears thickened. There was now no evidence of tumour behind it, but there was no pulse perceptible in the limb, which was much wasted. The pupil of the right eye was much contracted, and that of the left eye somewhat dilated, but active. A careful examination of the chest failed to elicit evidence of disease of the great vessels or heart. The action of the latter was feeble but regular when the patient was first admitted. The patient was generally emaciated, but had a good appetite.

The aneurism of the right side clearly involved the subclavian artery, and as I could feel the scalenus stretched over a portion of it, and at the same time could define apparently healthy artery beyond the tumour, I concluded that the aneurism involved the second and great part of the third portion of the subclavian artery. There was no pulsation to be felt in the space between the heads of the sterno-mastoid, and the disease did not therefore, at this time, involve, I believe, the first part of the vessel.

Having regard to the fact that the aneurism on the left side had undergone spontaneous cure, I resolved to abstain

from all operative interference, and give a fair trial to rest in the recumbent posture, and dietetic treatment. Accordingly, on August 4, the right arm was carefully bandaged from the fingers, and the fore-arm being flexed upon the chest, the whole limb was firmly secured to the side. He was ordered to maintain the recumbent posture, not getting out of bed for any purpose, and the following diet and medicine were prescribed: Two mutton chops; two eggs; biscuit instead of bread, and in as small a quantity as he could manage with; milk one pint; and no stimulants. ℞ Tinct. ferri perchlor. ♏ xx., tinct. digitalis ♏ x., aquæ ℥ss. t. d.

On August 7 the pulse was found to intermit occasionally, and the dose of digitalis was reduced to ♏v. The patient bore the confinement very well, though he missed his stimulants, and complained after a few days of pain after taking food, for which pepsine gr. x. once a day was ordered with relief.

This plan of treatment was strictly pursued for five weeks, but on September 9, when I returned to town after a three weeks' absence, I found that the patient's health was beginning to suffer, without any improvement in the aneurism, but that, on the contrary, it had decidedly increased in size. The arm was therefore unbandaged, the patient allowed to sit up, and he was ordered liberal mixed diet, with wine ℥vj. A careful examination showed that the aneurism had decidedly increased in size, and in the direction of the innominate artery, one evidence of which was the huskiness of voice which had supervened, presumably from implication of the recurrent laryngeal nerve. The right pupil still continued contracted. No bruit was audible in the tumour, nor was there any abnormal sound to be heard in the chest, but the heart continued to intermit at varying intervals, at one time as often as every five beats. The right arm continued very numbed after the bandage was removed, and as the patient complained of pain in it, which disturbed his rest, frequent subcutaneous injections of morphia were had recourse to, but no other treatment was pursued.

On September 29, I made an attempt to apply pressure upon the right subclavian artery beyond the aneurism, in hopes that coagulation of the contents of the sac might thus be effected. The patient having been put under the influence of chloroform, I, with the able assistance of the house surgeon and dressers, compressed the subclavian

artery beyond the aneurism for one hour, so effectually that there was no pulsation at the wrist during the whole of that time. The result of the experiment was, however, entirely negative, except that, as we expected, the patient complained, on regaining consciousness, of increased pain and numbness in the arm from the unavoidable pressure upon the brachial plexus.

Since that date, no special treatment has been pursued. The patient has had an attack of bronchitis, which has weakened him. The aneurism has slightly increased; the pulse still intermits; the voice remains husky, and the right pupil contracted. The patient is in the anteroom for examination.

Remarks.—This patient is an eminently unfavourable one for any operative interference. His arteries are evidently extensively diseased, and his general condition unsatisfactory. It is clearly impossible to apply a ligature on the proximal side of the aneurism with any hope of success, since no case of ligature of the first part of the subclavian or of the innominata has been successful. It has been suggested to me to employ a plan carried into effect in July, 1867, by Mr. Porter of Dublin, who cut down upon and compressed with a metallic compressor the innominate artery in a man suffering from an aneurism much resembling my patient's. The case terminated fatally, however, by ulceration into the vessel, as I had the opportunity of seeing at the post-mortem examination, at which I was present. The distal ligature offers more hope of success, were the patient in better general condition; but it would hardly be safe to follow the example of M. Pétréquin, who in 1853, in a case of aneurism of the first part of the subclavian, tied the third part, and subsequently injected the aneurism, with a fatal result.* Ligature of the axillary artery would appear to be more feasible, either immediately below the clavicle, as performed by Dupuytren in 1829,† or in the lower part, as in Mr. Canton's case in 1863.‡ Both of these cases, however, proved fatal. Treatment by galvanism offers another method, and the introduction of the negative needle alone, as proposed by Dr. Althaus, might give more favourable results than have hitherto followed the introduction of both needles within the sac of an aneurism.

* V. 'Broca sur l'Aneurysme,' p. 419, and 'Gaz. Heb.' i. 192.
† 'London Med. Gaz.' iv.
‡ 'Med. Times and Gaz.' Jan. 2, 1864.

Postscript.—The patient remained in 'statu quo' until the evening of November 21, when he coughed up a little blood; this was followed shortly after by the expectoration of a considerable quantity of arterial blood, and the patient sank.

At the post-mortem examination, the subclavian aneurism of the right side was found to involve the first part of the vessel beyond the vertebral artery, the whole of the second part, and the commencement of the third part of the vessel. The remainder of the first part of the subclavian was dilated to the size of the innominate artery. The ascending portion of the aorta presented two small saccular aneurisms, one in front and the other behind; and at the junction of the arch with the descending aorta was another small aneurism, which had opened into the left bronchus, giving rise to the fatal hæmorrhage. The left subclavian was completely obliterated and, with the brachial plexus, firmly connected with the distorted clavicle.*

IV.—*Cases of Ascites treated successfully with Tonics.*

By J. S. Bristowe. *Read November* 13, 1868.

THE following cases of ascites, which have all, with one exception, occurred in hospital practice, are, so far as I can recollect, all the cases of that disease which under my own treatment have terminated in the absorption of the ascitic fluid and in the apparent cure of the patient. They have also, all but one, been treated during the greater part of the time they were under my care, and notably during the period preceding convalescence, and during convalescence, on one principle. This coincidence of treatment and result, which I have endeavoured to represent diagrammatically, is, I think, interesting, and I have therefore ventured to bring the cases under the consideration of the Clinical Society. No one, I think, can be more painfully conscious than I am of the exceeding difficulty of determining, when a patient under medical treatment gets well, whether the patient has got well in consequence of, independently of, or in spite of the treatment to which he had been subjected. And I am very far from asserting that, in the cases which are appended to this paper, the disappearance of the ascites was due to the treatment employed. Still, when I consider that in nearly all the cases

* See 'Transactions of Pathological Society of London,' vol. xix. 1869.

other plans of treatment were first employed and were discontinued either because they were manifestly acting injuriously, or because, so far as I could judge, they were doing no good; that in nearly all the cases the patients had been tapped once or twice either before the tonic treatment had commenced, or before they could be considered to be fairly under the influence of that treatment; and further, that in nearly all the cases fluid accumulated or reaccumulated in the abdominal cavity while the tonic treatment was in progress, and then under the continuance of that treatment finally dispersed, leaving the patient quoad his ascites well; I confess I am inclined to believe that the favourable results have been in some degree due to medicine, and I entertain some hope that the society may adopt my belief.

It is scarcely necessary for me to admit that I have treated numerous other cases of ascites besides those which are here detailed: numerous cases in which patients have been temporarily relieved by tapping or in other ways, and have passed from my observation with ascites returning, or with every prospect that it would return; and still more numerous cases in which the patients have, while under my care, succumbed to their disease. It is probable that I have treated many of these with tonics, and of course unsuccessfully; but I have not thought it worth while to quote the details of any of them here, for although many of the latter may have a pathological value, few, if any, of these or of the cases which are incomplete, have any value in reference to treatment.

When, indeed, we consider the serious nature of the lesions on which for the most part abdominal dropsy depends, it does not appear surprising that the great majority of cases in which this symptom appears terminate in death. It is surprising rather that recoveries should be so numerous as they are; but it is obvious that these recoveries can be complete only in that very small proportion of cases in which the condition leading to ascites is itself remediable, and that in most cases they are temporary, like the recoveries from anasarca in heart-disease and renal-disease, the morbid process on which the dropsy depends remaining still in progress and tending surely to cause its recurrence.

I shall not presume to teach the members of this Society the pathology of ascites; but it is nevertheless worth while to pass in review the more important morbid conditions on which ascites depends, before proceeding to discuss the effects of treatment.

The local causes of ascites are, first and principally, affections producing obstruction to the passage of blood along the portal system of vessels; and, secondly, morbid processes affecting the surface of the peritoneum and involving doubtless the capillary and other small vessels.

To the former class of cases belong especially cirrhosis of the liver, and, I may add, a condition of liver in which that organ, having become invested in a fibrinous capsule, has become compressed, diminished in size, and rounded at its edges in consequence of the contraction of that capsule; and to this class belong also the nutmeg-liver, the lardaceous liver, and the liver within which cancer or other heterologous growths have formed. In all or most of these cases I need scarcely add that the spleen is apt to be enlarged, and often disproportionately enlarged. In the same class are to be included those cases in which the portal obstruction is due to pressure upon the trunk of the portal vein by some tumour (syphilitic, cancerous, hydatid, or other) developed in the transverse fissure of the liver, the gastro-hepatic omentum or the vicinity.

To the second class of cases belong cases of peritoneal cancer, cases of tubercular peritonitis, cases of so-called chronic inflammation of the peritoneal surface, especially when it is connected with or is dependent on affections of the ovaries, uterus, and neighbouring parts. And to this class also may be added those cases in which a chronic irritation of the peritoneum and effusion of fluid from its surface are kept up by the constant discharge into the peritoneal cavity of the contents of ovarian tumours, or of matters from other sources.

I have no practical acquaintance with ascites dependent on affection of the lymphatic or lacteal vessels and their glands.

But sometimes ascites is developed in the course of general anasarca, dependent either on renal disease, heart-disease, or chronic pulmonary affections, or (it may be) on a simply anæmic condition of system. In all these cases a certain amount of serum would naturally be poured out into the serous cavities as well as into the general connective tissue. But not infrequently the effusion into the peritoneum exceeds the amount which would be due to this cause alone, and produces manifest ascites, which needs to be tapped and perhaps re-tapped. In most if not in all of these cases this disproportionate accumulation of serum in the belly is associated with the presence of some one or other of the local morbid conditions which have been already enumerated as

the direct causes of ascites, especially with the nutmeg condition of liver, the contraction around that organ of a fibrinous capsule, general thickening of the peritoneal surface, and cirrhosis of liver, and as I believe is for the most part directly due to this associated disease.

It is obvious that in nearly all the cases which have been enumerated the likelihood of effecting any permanent improvement is very small, the likelihood of effecting a cure is almost out of the question. And, indeed, I may at once say that I have never, so far as I know, succeeded in arresting the accumulation of abdominal fluid, either in cases of malignant disease, or in cases where the dropsy has been directly or remotely due* to heart, lung, or kidney diseases, or in cases where it has been dependent on affections of the pelvic organs in females, or in cases where it has been a consequence of lardaceous disease of viscera. Neither, to the best of my belief, have I succeeded in effecting any improvement when the ascites has been produced by the pressure of tumours on the portal trunk.

I think it possible, however, that I may have benefited a case of ascites dependent on tubercular peritonitis; and I certainly believe that I have benefited cases in which the ascites was dependent on cirrhosis of the liver, or on the compression of that organ by a fibrinous investment.

We know that the progress of tuberculosis is occasionally arrested, and that the patient seems to make a fair recovery; there is no reason, therefore, to suppose that tuberculosis of the peritoneum may not occasionally become arrested also. We know, again, that heart disease or chronic Bright's disease of the kidney tends, in the course of its progress, to be accompanied with anasarca, that the anasarca is sometimes immediately brought on by some accidental complication or other condition, and become arrested and removed under appropriate treatment, and that although the heart or kidney disease still progresses, the dropsy reappears, perhaps, only after a long interval, or even not at all. We have reason, therefore, to believe that the ascites which appears in the course of cases of cirrhosis and such like diseases of the liver may occasionally be immediately due to the superaddition of some remediable morbid condition, and may disappear temporarily or permanently with the removal of that condition, even though the hepatic disease be still progressing towards its inevitable fatal termination.

* This statement was from memory, and I think somewhat too sweeping. J. S. B. July 21.

Indeed, it is in this sense only that I can venture to regard most of the cases which I append as being successful cases.

It is not necessary for me here to analyse my cases; I have given them in fair detail, and the diagram which I have made shows at a glance their more important features. There are a few points, however, to which I may specially draw attention. All the cases were cases of males. In all of them there was a complete absence of associated disease in the kidneys, heart, and lungs—excepting of such comparatively trivial diseases as might have been, and probably were, secondary to that in the abdomen. In all of them the patients came under my care while suffering from abdominal dropsy, and in all of them the dropsy gradually subsided, and finally disappeared while they remained under my care. In four cases the patients had to be tapped twice, and in two cases had to be tapped once, before the taking place of that final accumulation of fluid, which disappeared, so to speak, spontaneously. All the patients passed from under my care in a greatly improved condition of health, some in fact apparently quite well, and two I know retained their good health for several years subsequently. One case (Case 7) I believed at the time it was under treatment to have been a case of tubercular peritonitis, and I am inclined to think so still; the other cases I believe to have been cases of cirrhosis, or of compression of the liver by a fibrinous capsule; it is possible that two of these may have been cases of chronic peritonitis instead—the cases to which I refer are the fourth and the ninth; and it is not improbable that with one or two of the others there was associated some slight peritoneal inflammation.

With regard to the treatment of ascites, I may state that I have tried various forms of remedies, and, to the best of my belief, most of them have been valueless. I have often tried ordinary forms of diuretics, but have never, so far as I know (with a special exception to which I shall shortly advert) found the least benefit from them. I have tried diaphoretics, and especially the Turkish bath, persistently, yet have never that I know of seen the fluid diminish under their influence. I have tried drastic purgatives, and believe that I have had almost always to give them up in consequence of their injurious effects. I do not think I have ever seen them do any real good; and indeed I may remark here that diarrhœa, according to my experience, is a very commonly associated symptom of ascites and an unfavourable symptom, and one

that requires to be obviated; further, that I have often in post-mortem examinations of ascitic patients found the mucous membrane of the bowels œdematous, to which condition (traceable to the same cause as the ascites) I have been inclined to attribute the diarrhœa. I have once or twice tried mercurials to the extent even of affecting the gums, and have more than once brought on ptyalism unintentionally, yet never with a suspicion of advantage. The special exception to which I just now referred is a treatment recommended years ago by Sir Thos. Watson, on the authority of some old apothecary, in cases of chronic hydrocephalus, a treatment consisting in the exhibition, in combination, of metallic mercury and fresh squill. I recollect very well that when I was one of the house surgeons to St. Thomas's Hospital, a patient, forty-three years of age, was admitted under Dr. Barker's care suffering from ascites supposed to be due to cirrhosis; that in my official capacity I tapped him on three or four occasions at gradually decreasing intervals—the last interval not being more than a fortnight; that after the last of these tappings Dr. Barker put him under a course of the medicine in question; that fluid did not immediately reaccumulate, and that he left the hospital, several weeks after the last tapping, apparently well. Some three or four months afterwards, however, while he was still out of the hospital, and after the treatment had been discontinued for that length of time, the dropsy recurred, and I tapped him on one or two occasions at his own house. Six months after he had left the hospital he returned to it again, and then all remedies were useless; he remained in the hospital five months, suffering from ascites, for which he had to be occasionally tapped, and dying at the end of that time with tubercles in his lungs, a circumscribed empyema at the base of one, a tumour in the omentum (which I believed to have been due to extravasation of blood into that part from injury done in tapping, but which some regarded as malignant), and a liver healthy in structure, but contracted into a small rounded mass by a capsule of old lymph. To this latter condition I attributed the ascites. The recollection of this case has induced me over and over again to have recourse to the same remedy, but I must confess that my faith in it has got 'small by degrees and beautifully less.' It will be seen, however, that one of my nine cases of recovery was treated during the whole time he was under my care by this combination. This case is, in point of time, the earliest of the series, and I may add that

it is one of the two cases before referred to, in which there are grounds to believe that the ascites was due to some peritoneal inflammation. Of all my cases, too, it is the one in which, on all grounds, the recovery is most likely to have been spontaneous and independent of treatment. Most of the other cases of the series were treated for a longer or shorter time on the same plan; but I believe I am correct in saying that it was always discontinued, either because, while it seemed to be doing no good, the patient's general health called for treatment of another kind, or because it was manifestly, according to my judgment, acting injuriously. Occasionally salivation was produced. I do not think I have ever found it increase noticeably the amount of urine.

The only system of treatment, indeed, in which I have seen reason to feel any degree of confidence is that under which eight of my nine cases have recovered—the treatment, namely, by tonics (for the most part quinine and iron), backed up by the exhibition of as much and of as good diet as the patient could be prevailed upon to take, and by the administration of a certain amount (usually) of alcoholic stimulants. It is needless to say that tonics in these cases cannot always be given, nor always persisted in; and it will be seen in my cases that I have had occasionally to interrupt their use for periods of various lengths; neither when an ascitic patient can take a tonic, can he always take the same form of tonic, and I have consequently had to vary my prescription to adapt it to the patient's peculiarities of stomach or of health. Still, on the whole I have been obliged to vary my plan of treatment and its details surprisingly little.

I have no particular theory to propose in favour of the tonic plan of treatment, beyond the theory which stands at the bottom of the tonic plan of treating heart-disease, aneurism, Bright's disease, tuberculosis, cancer, and other chronic, if not incurable, affections. I assume, namely, that if a patient be suffering from some such disease as those just enumerated which is liable to be complicated with secondary lesions of themselves remediable, these complications are very likely to be obviated or arrested, or if they have arisen to be relieved, by promoting the patient's general health, and thus enabling him (as the phrase goes) to throw off these complications. I do not, of course, suppose that quinine or iron, or any other tonic has a specific influence in these cases, neither do I suppose that these are the only drugs or the only kind of treatment likely to be beneficial. If my views are correct,

I should suppose that other kinds of tonics are also likely, if not equally likely, to be useful; and that none of them is likely to be beneficial unless its exhibition be associated with careful attention to the patient's health in other respects, careful attention to diet, and care (especially in the case of the poor) that they be relieved from the toil and anxiety inherent in their daily struggle for existence.

Since the above remarks were written I have added another case (the tenth) to my list. In this case the removal of the ascites was not complete, and on that account I originally determined to omit it. But on reconsideration I have thought it right to append it, for if any of my cases show the beneficial effects of tonics in ascites this certainly does.

The patient came in with enlarged liver and ascites, from which he had suffered for a month. Thirty-six days after admission he had to be tapped. Almost immediately the fluid began to recollect, and in eighteen days the belly was as full as ever it had been, and measured forty-two inches in circumference. For forty-two days the circumference remained as nearly as possible stationary. Then for seventeen days the size of the abdomen gradually diminished, until it measured thirty-seven inches. The abdomen remained of that size for twenty-three days more, when the patient left the hospital, expressing himself as feeling well, but still having an enlarged liver, and still with some degree of abdominal dropsy. Five days after admission he commenced a course of quinine and iron, and continued it without intermission until he passed from under my treatment.

CASE I.—*Ascites in a gouty subject, connected probably with enlargement of Liver. Paracentesis once. Cure.*

Thomas Cooley, a plumber, 51 years of age, was admitted into St. Thomas's Hospital under my care, on May 20, 1856. He stated that he had been a temperate, and, for the most part a healthy, man; that he had never had ague or jaundice; but that for ten years he had been subject to occasional attacks of gout, the last of which occurred ten months since.

He dated his present illness from the previous November, when he was attacked with 'pains all over his chest and belly,' cough, and some diarrhœa. These symptoms had sufficiently abated at the end of two months to allow of his resuming his

occupation, but were not thoroughly eradicated. About three months ago the old symptoms returned, and again after two months subsided; but on this occasion their subsidence was followed by progressive enlargement of the belly; and the latter, a fortnight since, by œdema of the legs. He said that he had been getting very weak latterly, but that in all other respects he had felt well.

His aspect is that of a tolerably healthy man: the cheeks are florid, the expression natural. The skin is somewhat dry, and a little sallow in complexion, but there is no real jaundice. Says he does not sleep very well, but his tongue is clean, his appetite good, his bowels regular, and he has no thirst. He does not suffer from cough or palpitation, and both heart and lungs yield healthy sounds. Pulse 92. He passes a fair quantity of healthy urine without difficulty. The belly is much enlarged and tense with fluid accumulation within it; it is completely dull on percussion, with the exception (as he lies in bed) of a small area of resonance occupying the highest point. There is no tenderness, no recognisable tumour, and the superficial veins are not enlarged. He complains of a little pain across the lower part; the legs are œdematous, but the upper half of the body is free from anasarca. He was put on mixed diet, and ordered a grain of the iodide of mercury thrice daily.

May 29.—The bowels have been somewhat constipated since admission, and he has had to take several doses of opening medicine. There has been no appreciable change in the condition of his belly, but he has become salivated, has lost his appetite, and feels generally ill. To omit the iodide of mercury; to take 5 grs. of iodide of potassium with decoction of cinchona three times a day, a black draught every morning; and to use an alum gargle.

June 2.—On the 31st he complained of great pain in the belly; poppy fomentations were applied, the use of the opening draught was discontinued, and a mild anodyne was given at night. To-day he is certainly worse in health than he has hitherto been. The salivation has subsided in great measure; his appetite is fair, and he does not complain of thirst; but he looks anxious, and his belly is more distended than it was. He has no abdominal tenderness, but a good deal of aching across the lower part, especially at night. Tongue furred; pulse 108; skin dryish; passes little water; has no difficulty in breathing.

To omit his mixture, and to take 10 grs. of fresh squill and

mercury pill* three times a day, and 2½ grs. each of extract of hyoscyamus and Dover's powder every night.

He became after this much worse in all respects. No diuretic or other beneficial effect seemed to be produced by the treatment which had been adopted; but the abdomen became more tense, the aching pain increased; occasional nausea, and some difficulty of breathing supervened; and on the 7th paracentesis was performed. Twelve quarts of clear fluid were evacuated, with immediate and manifest relief. On the 9th it was noted that he continued to feel much better, that his appetite was improving and his bowels regular; but that he was very weak, that he slept little, that his tongue was a little furred and dryish, and that his pulse was 100.

To take 1½ gr. of quinine, in a mixture, three times a day.

For the next three or four days he suffered from rather severe diarrhœa, which was checked by the use of compound kino powder; but henceforth, up to July 2, his improvement was progressive, and, though slow, decided. Sleep and strength returned; the pulse gradually fell to 72; the tongue cleaned; the appetite became natural; the bowels continued regular; the abdominal aching, which during the first half of this period still troubled him, disappeared; and the belly, though continuing large and pendulous, gave no indication of reaccumulation of fluid. The edge of the liver could be distinctly felt below the margin of the ribs; there appeared to be enlargement of the organ, but no irregularity was detected. On the 27th he was put on full diet.

On July 2 he was attacked with febrile symptoms and great looseness of bowels; the tongue became furred and he lost his appetite. The quinine mixture was omitted, and an effervescing draught with a little hyoscyamus was substituted. The feverish symptoms gradually subsided; but the diarrhœa, which ceased temporarily on the 3rd, reappeared on the 5th, attended with sickness. There was, however, no abdominal tenderness or pain. Pulse 80. To take 10 grs. of compound kino powder two or three times a day.

10.—Still feels a little nausea, but the diarrhœa has ceased; his tongue is clean; his appetite improving; he has little thirst and he sleeps well; pulse 76; his belly is not tender; but, as he lies in bed, there is evidently fluid in each flank, which shifts its position as he moves.

Omit effervescing draught and compound kino powder. To resume the quinine mixture.

* Ten grains of this pill contained 3 grs. of metallic mercury and 1½ gr. of fresh squill.

Under a continuance of the latter treatment the ascitic fluid disappeared, his health became re-established, and he left the hospital on August 11, apparently quite well.

His recovery was permanent, for in the spring of 1857 he became an out-patient of mine for an attack of bronchitis, of which he got well. In 1858 or 1859 he again placed himself under my care in consequence of gouty symptoms; in the early part of 1860, his son, who was then a patient of mine, informed me that he was still in good health.

CASE II.—*Ascites dependent probably on Hepatic enlargement. Paracentesis twice. Cure.*

Thomas Scriven, a linendraper, æt. 47, was admitted under my care on June 20, 1861. He told me that his belly had been gradually increasing in size during the last four months; that this condition had not been preceded by any local or general signs of disease; and that nothing beyond a certain degree of weakness, and, for the last fortnight, œdema of the legs, had attended its progress. It appeared that he had always heretofore enjoyed good health; had never suffered from jaundice or ague, or any such affection as that under which he was at present labouring, but that, though never a drunkard, he had drunk pretty freely.

He was of medium stature, in fair condition, and with a perfectly healthy aspect of countenance; but the legs were œdematous, and the belly much distended, tense, and evidently full of fluid; there was, however, no tumour to be felt. His breath was somewhat short but there was no cough; the heart's sounds were healthy; pulse regular; tongue clean; appetite fair; bowels regular; urine scanty and without albumen.

To take ʒj. of spirit of nitrous ether, ʒss. of tincture of squill, and ♏ xx. of tincture of hyoscyamus out of camphor water, three times a day. Full diet.

This treatment was continued for six days, but with no beneficial result. Frequent vomiting indeed was superadded to his other symptoms. On the 26th, 10 grains of the pill of fresh squill and mercury was ordered to be taken thrice daily in place of the mixture. The vomiting, however, continued, and the patient began to suffer so much from the accumulation of fluid that on the 29th paracentesis had to be performed, and 40 pints of clear fluid were removed. A glass of gin daily.

July 3.—Was much relieved by the operation; the sickness and difficulty of breathing ceased at once; the legs have resumed their natural size. His appetite is now good and his

bowels regular; he says he feels as well as ever he did in his life. The free edge of the liver can be felt, however, extending two inches below the margin of the ribs.

His general health continued very good. The use of the squill and mercury pills was persisted in; but notwithstanding this, there was progressive though slight enlargement of the belly; and on July 20 he was therefore ordered to discontinue the pills and to take 1 gr. of sulphate of quinine thrice daily instead. During the next few days, however, the ascites increased notably, and it was thought advisable, while continuing the tonic treatment, to render it diuretic, and to associate therewith drastic purgatives. He was therefore directed, on the 24th, to take 20 ♏ of the tincture of the perchloride of iron, 40 ♏ of spirit of nitrous ether, and infusion of calumba, three times a day, and a pill containing ¼ gr. of elaterium, combined with a little colocynth and calomel, every other day. The pills gave him marked relief, and on the 31st they were ordered to be administered daily. The relief, however, was sensational rather than real, for it was noted on August 7 that he was not quite so well; that his appetite was bad, his breath short, his sleep disturbed; that his belly was as large as ever it was, and as tight; and that the legs, too, were œdematous. He was passing a fair amount of water. The pills had been acting violently and had to be discontinued.

On the 10th he was tapped for the second time, and 39 pints of clear fluid were removed. He was again much relieved; the bowels, however, continued irritable, but were checked by the occasional use of astringents. Two glasses of gin were allowed him daily, from two or three days after the operation.

August 28.—He is weak, but manifestly improving in health. Fluid has been collecting gradually in the abdomen, but is not yet sufficiently abundant to cause much inconvenience.

To take a mixture containing 1 gr. of sulphate of iron and 2 grs. of sulphate of quinine, in place of the mixture ordered on July 24.

From this date up to the middle of September there was little or no change in his condition; the belly became perhaps a little fuller and measured 42 inches in circumference. After this it gradually diminished. On October 2 it still contained fluid and measured 40½ inches in circumference. By the 31st it was reduced to 37 inches and very little, if any, ascites remained. He was kept in the hospital, under

the same treatment, until November 22, when he was discharged, still measuring 37 inches round the belly, but apparently free from abdominal disease. He looked well; and his digestive functions were naturally performed.

I have to add to the above account that on September 25 he spat, on getting out of bed, about an ounce of pure blood, and that he continued to do this, sometimes every morning, sometimes every two or three mornings, up to the day of his dismissal. He stated that for ten years past he had been in the habit of spitting blood whenever he had a cold. But I was unable to ascertain its actual source. There was no soreness of the mouth or throat, no cough, no dyspepsia. The heart and lungs, on physical examination, gave no evidence of disease; but the blood was hawked up, and to the best of my belief came from some part of the lungs or air-passages. The only material change of treatment to meet this complication consisted in an increase in the amount of sulphuric acid in his quinine and iron mixture.

CASE III.—*Ascites probably connected with Hepatic disease. Cure without tapping.*

John Kirk, a fishmonger, 49 years of age, was admitted under my care on August 23, 1861. He stated that he had never been seriously ill before the present attack came on; that he had never had jaundice or ague. He has been subject, however, to a winter cough for some years past, and is in the habit of drinking freely. His present illness came on a month ago with pain in the lower part of the belly, which was soon followed by ascites, and shortly afterwards by œdema of the legs.

He is a tolerably healthy-looking man, and has no tinge of jaundice. His tongue is clean, his appetite good, his bowels regular. The urine is healthy. He has a slight cough, and respiration is attended with a little rhonchus; but the chest is normally resonant or percussion, and the heart's sounds and action are natural. The abdomen is large and somewhat tense, dull on percussion except in the part that happens to be highest, fluctuates, and clearly contains a large quantity of fluid. It is not tender or painful. The legs pit on pressure. To take 5 grs. of iodide of potassium, 10 minims of ipecacuanha wine, 15 minims of tincture of squill, and 20 minims of tincture of hyoscyamus, out of compound infusion of gentian, thrice daily; mixed diet; gin ℥ij. daily.

There was little or no change in his condition during the next month or six weeks. He occasionally complained of

aching pain in the ankles and feet, and for about a week was troubled with diarrhœa. On September 14, a mixture containing decoction of scoparium, acid tartrate of potash and tincture of hop, was prescribed in place of the mixture he had been taking; and on the 21st, ʒj. of spirit of nitrous ether was added to each dose; on the 28th, a combination of aloes and calomel was ordered to be taken every other night.

October 2.—It is stated, on this day, that the patient feels on the whole somewhat better in health than he was on admission, and that his legs are less œdematous; but that the abdomen has undergone no appreciable change and measures 39 inches in circumference.

To take 2 grs. of sulphate of quinine and 1 gr. of sulphate of iron three times a day, and to omit other medicine. Gin ʒiij. daily.

From this time the abdomen gradually shrunk, and all fluid disappeared from it. And on November 27 he was discharged, still with a trace of œdema about the ankles, but, otherwise apparently quite well, and measuring only 33½ inches round the belly. During the eight weeks in which he was under the quinine and iron treatment, besides the disappearance of the ascites, he improved in general health, his appetite increased, and he became stronger. Occasionally, however, especially at first, he suffered from abdominal pain, and once or twice for a day or two at a time he suffered from diarrhœa. No hepatic enlargement could be detected.

CASE IV.—*Ascites. Paracentesis twice. Favourable result under use of Quinine.*

George Brider, a sawyer, aged 39, was admitted into the hospital under my care on May 31, 1859, having been ill for twenty-three days only. He had, however, been in the habit of drinking much beer and gin, and to this habit attributed his illness. He complained, in the first instance, of pain after food, and other dyspeptic symptoms, but without vomiting; and about the same time, or shortly after, the abdomen began to swell. He had passed little water, and had had no jaundice. There had been no œdema of the legs.

At the time of admission he was still complaining of pain at the chest after food, and there was also now frequent vomiting; the tongue was pale; the bowels quite regular; the motions natural; the abdomen was large and full of fluid, but there was no œdema of the legs; the urine was healthy. There was nothing amiss with the thoracic viscera. His medical treatment consisted chiefly in the use of a mixture

containing soda, rhubarb, ginger, and gentian, and about every other day of a drastic saline purgative. The abdomen, however, still continued to enlarge, and about a week after admission the legs took to swell.

On June 10 he was tapped, and thus relieved of 13 quarts of transparent fluid. His symptoms were all much relieved by this operation, especially his appetite improved; and no abdominal tumour or hepatic enlargement could be discovered.

Three days after the tapping, the medical treatment was changed: and, in place of that above specified, he was put under a course of iodide of potassium and cinchona, with which were associated twice a day two pills containing about 3 grains of metallic mercury and 1½ grains of fresh squill. The abdomen, however, rapidly refilled and all his former symptoms returned.

On July 6 he was tapped for the second time. On this occasion 10 quarts of serum were removed, and again the operation was attended with much relief. From this time up to the 15th the same treatment was continued, the abdomen was gradually increasing in size, and at that date distinctly contained fluid. As the treatment which had been adopted had evidently produced no beneficial effect, it was again changed. He was ordered to take three times a day a mixture containing gr. 1½ of sulphate of quinine. For the next 10 days his general health seemed to improve somewhat, but little or no change took place with respect to the abdomen. After that his amelioration was rapid, his abdomen by degrees lost all trace of dropsical accumulation, his appetite and flesh and strength returned, and on August 19 he left the hospital apparently quite well, and expressing himself as feeling better than he had done for twenty years.

I may add that his diet was varied according to his appetite; and that when his appetite was good, there was little or no restriction placed upon it.

Case V.—*Ascites, due probably to Liver affection. Twice tapped.*

George Spinks, aged 53, carpenter, admitted under my care June 16, 1863, states that his general health has been good, but that he has drunk much beer. Had rheumatism twenty-one years ago. His present illness began five weeks ago with swelling in the legs; a week after this, his belly took to swell, and he began to suffer from languor, weakness, loss of appetite, and pain across the back. Most of these

symptoms have increased upon him; his legs and his belly have continued to enlarge, but the upper part of his body and his arms have fallen away. He is now emaciated. Has a slightly furred and fissured tongue, with thirst, and a bad appetite, and pain after eating, but regular bowels; urine sp. gr. 1030, no albumen; heart sounds healthy; pulse 84; sleeps badly. Belly large, and rather tense, and distinctly containing fluid. No hepatic dullness extending below the ribs. There is some dullness, however, over the lower part of the right side of the chest; and throughout the lower half of this side of the chest there is crepitation in breathing, that above being minute like that of pneumonia, that below being coarser and irregular, and due probably in part to friction. There is also a little coarse crepitation at the base of the left lung. He has no pain in the chest, and neither has had nor has cough. Milk diet. A drachm of sulphate of magnesia with an ounce of compound infusion of gentian three times a day.

20.—No material change; chest and abdomen in the same condition; bowels still confined. Two drachms of sulphate of magnesia three times a day. Mixed diet; gin two ounces.

27.—Does not feel worse; but distinctly the belly gets fuller, and he suffers much from 'wind.' To take spirits of juniper, spirit of nitrous ether, and decoction of broom three times a day.

July 1.—Gets larger both in belly and in legs; general health no worse. Castor oil every other day; gin four ounces; beef tea Oj.

8.—To omit his mixture and to take 10 grs. of fresh squill and mercury pill.

15.—Is now much distended with fluid, and complains of feeling very full; the legs and scrotum are also much swollen. Complains very much of 'wind,' and has great pain after eating. His appetite, however, is good, his bowels regular; sleeps badly. To be tapped.

17.—Was tapped yesterday, and had 28 pints of fluid removed. He was much relieved by the operation. No tumour or enlargement of the liver is to be detected. The tongue is a little furred and patchy, and the crepitation continues on the right side of the chest. To omit former medicines and to take 2 grs. of sulphate of quinine and 1 gr. of sulphate of iron with a little spirit of peppermint thrice daily, and 10 grs. of compound colocynth pill occasionally.

28.—A $\frac{1}{4}$ gr. of elaterium with a little calomel and colocynth every other morning; fish in place of meat.

Aug. 8.—The patient has increased a good deal in size

since he was tapped, and has some pain across the belly. The elaterium has acted violently. Feels weak; tongue clean; appetite good; some crepitation still at right base; to omit elaterium; an egg.

14.—Abdomen enlarges; his legs have been swelling the last few days, and his breath has been getting short; complains of flatulence; tongue a little fissured.

19.—Tapped yesterday of 31 pints; is now easy and comfortable; brandy ℥j. daily.

Sept. 4.—Has enlarged to a certain extent, and the abdomen now evidently contains fluid; he feels pretty well, however. To have a Turkish bath once a week.

8.—The bath was agreeable to him and gave him some relief. He has had a troublesome cough for nearly a week, and smallish crepitation is still audible at lower part of right lung. There is less of it, however, than there formerly was. Does not sleep very well at night. Abdomen as on the 4th. Half a grain of hydrochlorate of morphia every night.

15.—Had the second bath on the 11th; abdomen a good deal smaller than it was, and has been getting smaller for several days past. Feels and looks better in health. Turkish bath twice a week.

22.—Continues to diminish in size; has had pain in belly and diarrhœa during the night. Two grains each of extract of hyoscyamus and Dover's powder twice a day; to omit the quinine and iron mixture.

29.—The abdomen is now quite soft and flaccid, though it still contains a little fluid. Has had some pain in the belly during the greater part of the last week.

October 6.—The belly still gets smaller, but he continues to complain of much dragging pain in it; and he has been getting very thin and weak. Tongue a little furred; bowels regular; slept badly last night; no crepitation at base of lung; to omit bath and hyoscyamus and Dover's powder; to take again the quinine and iron mixture; arrowroot.

13.—The dragging pain continues; an opium pill relieved it on the 10th; and linseed meal poultices have benefited him since. There is little or no fluid in the belly. Is weak but not weaker than he was.

Nov. 4.—The patient has continued to get weaker and thinner; but in other respects remains as he was.

7.—I examined him carefully this morning, and detected no fluid whatever in the belly. The belly is however rather large and flabby. He complains greatly still of the griping pain

which he has now had for so long; it comes on in paroxysms and seems to be attended with peristaltic action of the bowels. The bowels are regular; and but for the pain his appetite would be good; tongue clean; no crepitation at base of lung; to omit the quinine and iron and the gin; to take 5 grs. of Dover's powder three times a day, and 6 ounces of sherry daily.

11.—Pain in belly much relieved by pills. Weak and thin, but in other respects healthy.

CASE VI.—*Ascites, connected probably with hepatic disease. Once tapped. Cured.*

John Blissett, aged 39, traveller, admitted under my care August 3, 1863, had syphilis twenty years ago, followed by secondary symptoms. About fourteen years ago, after returning from the West Indies, had a slight attack of jaundice. Twelve months since he was kicked by a horse in the belly, and has since then suffered from an abdominal rupture, situated close to the umbilicus. Has drunk largely of beer. With the above exceptions his health was good up to about six months ago. From that time the belly had been swelling and latterly the feet also. His belly has been getting specially large during the last two months, and he has become also much emaciated.

He is now unhealthy-looking, sallow, and much emaciated, with numerous scars of what may have been a rupeal eruption. His abdomen is greatly distended with fluid; the ventral hernial sac, which occupies an area equal to the palm of the hand, being distended, and dullness extending on the right side up nearly to the nipple. Appetite moderate; no vomiting; tongue moist, but thickly furred; bowels regular; pulse 88; heart sounds healthy; no cough; urine scanty, sp. gr. 1022, no albumen, much mucus. A $\frac{1}{4}$ gr. of elaterium with colocynth and calomel every other day; milk diet; 2 ounces of gin.

8.—The pills have caused much pain, but have acted slightly only; says that he feels very weak to-day; tongue somewhat furred, but moist; appetite good; mixed diet.

12.—Much the same; the pills have acted violently and made him feel ill; no change as regards belly; to omit pill, and to take 2 grs. of sulphate of quinine and 1 gr. of sulphate of iron three times a day.

18.—Gets fuller; was tapped to-day, and 25 pints of serum were removed. No abdominal tumour could be dis-

tinguished after the emptying of the belly, and he felt much relieved. Gin two glasses.

19.—As he slept badly, a morphia draught was given this night. His appetite is good, and he is going on very favourably.

25.—His belly is filling; his legs are much swollen; he is in no pain and feels pretty well in himself.

Sept. 1.—Certainly gets fuller; legs more swollen. To have a hot foot-bath.

15.—Is somewhat larger. To have a Turkish bath.

18.—Had the Turkish bath yesterday; sweated but little; felt weak after it, and does so still; has had diarrhœa since. Porter Oj.

22.—Thinks he is not quite so large; has regained his strength, and would like to try another bath.

25.—The last bath (on the 23rd) relieved him very much: and he has continued better since. Thinks he is diminishing in size; Turkish bath twice a week.

29.—Better.

Oct. 13.—He has continued to get smaller, but the belly still contains some fluid. His appetite is good. He has decidedly improved in his general health, but thinks that his strength has somewhat diminished. To omit the baths.

31.—He has gradually improved; and he left the hospital to-day, apparently well.

CASE VII.—*Chronic* (? *tubercular*) *Peritonitis. Ascites. Cure.*

Master S., a delicate boy, 8 or 9 years of age, had been a pupil at St. Ann's School. In October 1859 he met with an accident there, which resulted in the loss of one of his eyes. He fell into ill-health after this, and at the close of the year came home. At the latter end of January or the beginning of February 1860, his ill-health began to assume a definite character. He became heavy and dull and feverish, lost his appetite, and complained of much pain after eating, and great tenderness in the belly, but nevertheless did not find it necessary to keep his bed. He had no sickness or diarrhœa. Late in March he came under my care. He was then weak, emaciated and pale, and his belly was large, tight, distended with fluid, and at the same time somewhat tender on pressure. He was thirsty and had little or no appetite; the bowels were regular; the breath was short, but there was no cough; the pulse rapid. The chest was resonant on percussion, and the breath sounds were healthy.

There was no jaundice, and the urine contained no albumen. He had not had scarlet fever, and had never suffered from ague. I took an unfavourable view of the case: I looked upon it as one of chronic peritonitis; and as chronic peritonitis is almost always tubercular, and as the history and appearance of the boy both suggested scrofula, I felt very little doubt but that his was a case of tubercular peritonitis and would probably soon prove fatal. I prescribed at this time simply some stomachic mixture with the object of removing his dyspeptic symptoms.

On April 11, I noted as follows: 'He does not seem to have improved; he is somewhat weaker; complains much of pricking pain in the belly, which often keeps him from sleeping. The belly is perhaps more flaccid than it was, but still fluctuates and is dull on percussion; no cough, breath short, pulse 104; appetite perhaps a little better; thirsty; bowels regular; has much pain on the top of his head. To take 12 minims of tincture of perchloride of iron out of infusion of calumba three times a day.

April 16.—Little if any material change. Belly measures 31 inches in circumference. Two grains of sulphate of quinine and ½ gr. of sulphate of iron three times a day.

23.—Decidedly better; his appetite, his appearance, and his spirits are all improving. The belly measures now 28 inches in circumference, but it fluctuates distinctly and still contains much fluid.

30.—Improves considerably. He looks better, more cheerful, and rosy. The belly is much smaller and softer, and has measured 27, 26, and 25 inches in circumference at different times during the week. It is larger, however, than natural, and still fluctuates. It is somewhat tender on deep pressure, but no tumour is to be felt. He occasionally suffers from griping pains, but the bowels are regular; tongue clean; appetite good; lives well on a little meat, beef-tea, and eggs, and a little wine and beer daily. He has no cough, no headache, and sleeps well. During the last week he has lost the nocturnal perspirations, which had hitherto troubled him.

May 7.—A good deal better. The abdomen still contains a little fluid, and is somewhat larger than natural: it measures 25 inches. Is stronger, more cheerful, and looks better; his appetite is better; still has a little griping pain, especially in the morning, but the bowels continue regular; pulse 96; tongue clean.

14.—Better in all respects; the abdomen, however, still contains traces of fluid, and is larger than it should be.

The patient continued under medical treatment for two or three weeks more, by which time he appeared to be restored perfectly to health.

Since then I have seen him occasionally, and indeed have treated him once or twice for slight ailments, but he has suffered under no recurrence of his abdominal disease; and although he is still a delicate-looking lad, he enjoys on the whole very fair health. I last heard of him, from his mother, on the 22nd of last October. (This was written early in 1861.)

CASE VIII.—*Ascites, caused probably by hepatic disease. Twice tapped. Cured.*

Thomas Hudson, aged 42, horse-keeper, admitted under my care January 18, 1865, says that about 18 months ago he had a similar attack, for which he was under treatment in Guy's for 14 or 15 weeks, and that he has not had very good health since.

His present illness came on about six weeks before admission, with pain on the right side of the belly, and some fullness of the belly. The pain increased, and the belly progressively enlarged; notwithstanding which he continued at work until January 13. His appetite all along had been bad, and he had a tendency to diarrhœa. He has slept badly, and during the last three weeks has had some cough and difficulty of breathing, and has lost rapidly flesh and strength. The legs have been getting œdematous latterly. He says he has been in the habit of drinking seven or eight pints of beer a day.

He is now much emaciated; not jaundiced. The abdomen is distended with fluid, and his legs are a little œdematous. The tongue is somewhat furred; his appetite is bad, but he is neither thirsty nor sick. Heart and chest sounds healthy. Pulse 100. Urine not albuminous. Milk diet. A purge at once, and a diuretic mixture thrice daily.

On the 20th, the above mixture was replaced by one containing gr. ij. of sulphate of quinine and gr. j. of sulphate of iron; and on the 24th, instead of the quinine and iron, 10 grs. of the fresh squill and mercury pill were ordered three times a day, and he was put on mixed diet.

Up to February 1st he gradually became worse. His tongue got more furred; his appetite deteriorated; he became sleepless at night; the abdomen became distended

and very tense, notwithstanding that he had during the last few days been passing much more water than he had previously done, and had been suffering rather from diarrhœa. The legs, and especially the scrotum, had become highly œdematous, and the latter congested.

Paracentesis was performed, and 17 pints of serum withdrawn, with marked relief. On the same day, the pills of squill and mercury were discontinued, and he commenced taking daily ʒiv. of gin.

After the tapping, the abdomen was explored, and no trace of hepatic enlargement, or of other tumour, was detected.

On February 3 he was ordered to resume the quinine and iron mixture three times a day. At that time the œdema of the scrotum still remained. He was very weak, and his bowels were still loose; but his tongue was clean, and his appetite had improved.

During the next few days all œdema disappeared, and his health improved, but he complained a good deal of flatulence. The bowels were freely open.

On the 14th, the belly (which seemed to have been gradually enlarging) was found distinctly to contain fluid. He was ordered to take a hot bath.

By the 21st the belly was nearly as much distended as ever; his appetite had diminished, and his rest was becoming disturbed; his bowels were freely open, but not loose. A mixture, containing compound infusion of gentian, peppermint, bicarbonate of potash, and ʒss. sulphate of magnesia, was ordered three times a day. This brought on considerable diarrhœa, but no relief. The abdomen still enlarged, and his uneasiness became extreme.

He was tapped, for the second time, on February 25, on which occasion 26 pints of fluid were removed. On the day previous, the mixture containing sulphate of magnesia had been discontinued, and one consisting of infusion of quassia with ♏xx. of the tincture of the perchloride of iron was prescribed.

There was no evidence of tumour, and no tenderness of the belly after the operation. The tongue was clean, but the appetite not good; and he slept badly. Pulse 104.

Very soon after the operation, the abdomen began to swell again; and on March 3 it was noted that it distinctly contained fluid. His general health, moreover, did not improve. He suffered from shooting pains in the belly, and pain across the back; he slept badly, had little appetite, and

suffered again from diarrhœa. For this gr. v. of compound kino powder were ordered every six hours. The powder checked the diarrhœa for a time. By the 14th the abdomen had become a good deal distended, and his general health had undergone further deterioration. The diarrhœa had returned for a few days, although he had persisted in the use of the kino; and his tongue had become glazed, dryish, and fissured. He was also getting weaker and thinner. His pulse had varied between 90 and 100.

On this day (14th) the medicine was again changed, liq. cinchonæ, ♏xv. acid sulph. dil. ♏xii. and dec. cinchonæ, three times a day, being ordered; and about the same time the kino powder was directed to be given every four hours.

On the 21st, the diarrhœa was noted to continue still very severe. He felt very poorly, and looked so; his tongue was still dryish and somewhat furred, and his appetite bad. During the previous three or four days, moreover, he had been suffering from an eruption of lichen lividus over legs and feet, and in a less degree about hands and wrists. An examination of the chest at this time showed the thoracic region to be quite healthy. There had been no further enlargement of the belly. An enema, containing half a drachm of laudanum, was given.

From this date the improvement was continuous. A tendency to diarrhœa continued for another fortnight; but the kino was persisted in until the patient left the hospital. The tongue got clean; the appetite improved; the pulse fell to between 80 and 90; and the ascites, after remaining, so far as I could judge, nearly stationary for a week or two, gradually subsided, and by April 21 had left no trace. A little œdema of the lower extremities had disappeared previously.

On April 27 he was sent, at his own request, to the Convalescent Hospital at Walton. He was still very thin and weak, but in other respects seemed in fair health. He remained there for a month or two, and on leaving it called upon me. I have no note of his condition at that time, but I recollect that he was still much emaciated, but he was stronger than he had been, and there was no return of dropsy.

Case IX.—*Ascites. Cured.*

Henry Prentice, aged 30, clerk. Admitted under my care June 13, 1854. He has been a sober and a healthy man, and has never had jaundice or any other sign of hepatic

disease. His illness commenced gradually, three weeks ago, with slight feverish symptoms, abdominal uneasiness, and enlargement of the belly.

On admission, his general appearance was not very unhealthy, except that his abdomen was much distended; this was a little tender on deep pressure, and contained a considerable quantity of fluid; the legs also were swelled slightly. There was no sign of hepatic disease or of abdominal tumour. The heart and lungs were healthy. Pulse 72. The urine was free from albumen, but scanty. His tongue is a little redder than natural, his appetite bad, and he is thirsty. He sleeps badly at night, and sweats much then. To take a purgative containing bitartrate of potash and jalap.

June 15.—To take 5 grs. of fresh squill and mercury pill three times a day. After being stationary for a few days, he began to improve.

On the 23rd, the dose of squill and mercury was doubled. He still continued to improve, and left the hospital, perfectly well, apparently, on July 10.

Case X.—*Ascites. Relieved.*

Joseph Fox, aged 53, porter. Admitted under my care February 14, 1862. Subject to a winter cough, but in other respects has enjoyed good health. His present illness came on, he says, about a month ago, after exposure to wet, with swelling in the legs and belly. Says that he had not had pain in the back or elsewhere, and that at the commencement of his illness his urine was scanty and high-coloured.

His belly is now distended with fluid, and his legs and scrotum are œdematous. There is dullness with a sense of resistance for two or three inches below the margin of the right ribs; chest resonant; breath sounds feeble; heart's sounds healthy; pulse 72; urine free from albumen. He is sallow and anæmic-looking. Ordered—Ext. elaterii gr. $\frac{1}{4}$, ext. aloes co. gr. ij., hyd. subchlor. gr. jss., capsici contriti gr. ss., theriacæ q. s. ut ft. pil., alt. diebus. Pot. tart. acid. ʒss., pot. nit. gr. v., tinct. lupuli ʒj.; decoct. scoparii, ʒxj., t. d. Milk diet.

19th.—The pills have acted powerfully, and have caused much pain in the belly; but the swelling in the legs and scrotum has subsided. The abdomen remains as it was. Has a slight cough. Pulse 62. To omit above medicines, and to take instead—Ferri sulph. gr. j., quiniæ sulph. gr. ij.,

acidi sulph. dil. ♏ij., aq. dest. ℥j., t. d. To take mixed diet and a glass of wine.

From this date up to March 22 his condition varied a good deal, but on the whole he deteriorated in health. His abdomen became slowly more and more distended, and he latterly suffered from aching pains in it. Œdema of the legs and scrotum returned, and at length became considerable; his breath, too, grew very short. His sallowness became distinct, though very slight, jaundice. His tongue continued clean, his appetite fair, and his bowels for the most part regular; but from the 9th to the 15th March he suffered (without any obvious cause) from severe diarrhœa, which was checked by the use of pulv. kino comp.

On March 22 paracentesis was performed, and 15 pints of fluid were evacuated. He was much relieved by the operation; but the abdomen still continued large, and was thought still to contain fluid. The liver, too, was now found to extend for nearly four inches below the ribs, and extending from the right hypochondrium across the scrobiculus cordis. A little below the ensiform cartilage there was a roundish protuberance, apparently connected with the liver.

After this his general health on the whole improved: it certainly did not go back. He had an attack of diarrhœa, commencing three days after the operation, and lasting four or five days, which was again relieved by the compound kino powder. His abdomen rapidly filled; and on the 29th (the day on which the diarrhœa was reported to have ceased) his belly measured 41 inches in circumference. On April 9, it appeared to be as full as it had ever been, and measured 42 inches round. From this date to May 21 the measurement varied between 41 and 42 inches; on the 21st, it measured 41½. After this it diminished. On May 28, the abdominal circumference was 39 inches; on May 31, it was 38 inches; and on June 7 it was 37 inches; and it continued at 37 inches up to his departure from the hospital on June 30. At this time he felt very well as regards his general health, had improved in flesh and strength, had a clean tongue, and good appetite. From May 21 an egg was added to his diet. His bowels were regular, and his pulse was normal as to frequency; but the liver was still enlarged; and although the abdomen had diminished in circumference from 42 to 37 inches, and had been stationary at that latter figure for nearly three weeks, it still distinctly contained fluid. His complexion also was still very sallow.

V.—*Wound of the Knee-joint followed by acute Inflammation; subsidence of the Inflammation after Ligature of the Femoral Artery; recovery. Under the care of* Mr. Little. Communicated by Charles F. Maunder. *Read November* 13, 1868.

J. C., aged 33, a man in good health, but apparently not of strong constitution, who had lived temperately, met with the following accident on May 3, 1866. An engine wheel weighing many cwts. fell and struck his knee, inflicting a curvilinear wound, half an inch above the patella, and extending transversely about three inches towards the outer side of the joint. The wound was a lacerated one without contusion; it laid open the joint, cutting through a part of the tendon of the quadriceps extensor. There was free escape of synovia. About one hour after the accident the man was brought to the hospital, and the wound accurately closed with three silver sutures, a straight splint was applied to the back of the limb, and the knee surrounded with bags of ice. He was put on middle diet and passed a good night without pain. The next day there was some effusion into the joint, but there was no heat or constitutional disturbance.

May 5.—Effusion less, patient very well. Ice continued, and he complains of pain if fresh is not frequently applied.

6.—So well that he was placed on full diet.

10.—Has gone on uninterruptedly well with no bad symptoms whatever. The ice has been continuously applied. The wound is healed, the sutures are still in and excite no inflammation.

11.—There is some redness along the inner side of the knee and some pain.

12.—Knee-joint much increased in size, red, and tense with fluid, great incessant pain which is much aggravated if the joint be touched.

13.—Joint still more swollen and hot, notwithstanding three large bags of ice, red and tense, the redness extending some distance up the thigh—particularly on the inner side where the tissues are brawny—and down the leg. Patient suffering much from pain and sleeplessness, with a pulse of 120, anxious countenance, and severe general constitutional disturbance. The inflammation in the joint is evidently passing into the suppurative stage and spreading upwards from the knee. Mr. Maunder saw the patient with Mr. Little, and proposed the ligature of the femoral artery as a

means of arresting the inflammation. Considering that the disease was likely to prove fatal to the limb or the life of the patient, Mr. Little tied the artery at once at the apex of Scarpa's triangle, the patient being under chloroform. The operation was performed in the ward, in order to save him the pain and disturbance of removal to the theatre. The operation presented no unusual feature; there was little bleeding; the wound was closed with silver sutures. The redness about the knee immediately lessened, and the patient, on recovering from chloroform, remarked with surprise and delight that the pain was gone. Half an hour after the operation the pulse was 100, and the patient expressed himself as quite comfortable. Five hours later, at 9.30 P.M., he felt better and was without pain, pulse 96, knee warm, no longer red, foot cold.

14.—4 P.M. Patient has slept well without medicine, is quite without pain, appetite is good, pulse 90, ordered 6 oz. of wine, and full fancy diet. The knee is warm, red round the wound, but nowhere else.

The next morning there was a discharge of three or four ounces of thick yellow pus from the outer angle of the wound of the knee. During the day the wound discharged freely. The knee seemed of normal temperature, the foot warm.

16.—Patient had some starting pains during the night, so that he slept badly. Mr. Little, feeling doubtful fluctuation on the side of the thigh above the knee, made an incision, but no pus was found; the discharge from the knee was very considerable. The quantity of wine was increased to 10 ounces. During the next night he had a profuse sudden bleeding from the nostril, which he says almost choked him before he could get the assistance of the night nurse to raise him up in bed.

He went on uninterruptedly well with the exception that the wounds were very slow in healing and showed little power, particularly that in the thigh which discharged very freely. The ligature came away on June 1, 17 days after its application, but the wound was not healed until the 13th.

June 19.—Both wounds healed, knee measures 15 inches, being $2\frac{1}{2}$ inches less than before the operation, and is quite stiff and straight. The leg is slightly œdematous.

The patient was now allowed to sit up, and gradually acquired the use of his limb, and regained free motion to the extent of 20°. Further motion appeared limited by thickening around the joint.

Three months afterwards the patient was quite well, knee in the same condition. He refuses to have anything done to increase the range of motion, as he can do his work satisfactorily.

VII.—*A Case of Acute Laryngitis with Spasm of the Glottis, treated by Tracheotomy.* By Alexander Bruce. *Read November* 27, 1868.

MICHAEL SMITH, aged 45, a cutler, was admitted into the Westminster Hospital on September 3, 1868, for severe dyspnœa, attended with symptoms of acute laryngitis.

History.—The patient has usually enjoyed tolerably good health, but suffered from syphilis when a young man, and has since had some slight secondary symptoms. He occasionally drinks freely, but is not an habitual drunkard. For some years he has been under the care of Dr. Symes Thompson, at the Brompton Hospital, for repeated attacks of winter cough, which have, however, been less frequent and severe during the last two winters. Dr. Thompson informs me that there has never been any evidence of pulmonary phthisis, and that at the present time (October 1868) the patient is free from any lung affection. He has occasionally suffered from slight temporary hoarseness, but has never lost his voice, nor has he ever been under treatment for any laryngeal disease. During the last week in July of the present year, this symptom became more troublesome, and during the first week of August he was sent to Dr. Marcet for laryngoscopic examination. Dr. Marcet has kindly favoured me with the notes of his condition at this time: 'Aug. 4. I had a good view of the larynx. Its mucous membrane was swollen, red, and glistening. The larynx appeared funnel shaped, with the chords at the apex. These were observed to have lost the power of tension, when approaching each other in the act of phonation; in other respects they are healthy.'

The patient then went to Ramsgate where he became so much worse that after a short stay he returned to town and presented himself a few days later at the Westminster Hospital. The dyspnœa and hoarseness had now been distressing for upwards of ten days, and were increasing.

On admission the patient was suffering from considerabl

difficulty of breathing, which caused him much distress, but did not appear to threaten any immediately serious consequences. He speaks in a hoarse whisper, and seems restless. Face dusky; pulse 80, full and regular; bowels confined. Leeches and a blister have been applied over the region of the larynx, which is now poulticed; the skin of this part is swollen and irritated. A mercurial purge, and the inhalation of the steam and the fumes of choride of ammonium was ordered.

At midnight I was summoned to the patient, and found him in a state of great excitement, somewhat delirious, and evidently not recognising where he was. He was quite unable to lie down; his breathing was loud, rough, and very distressing; his voice was only a hoarse whisper. An attempt was made to induce him to submit at once to an operation, to which he at first consented, but when placed on the table he became violent, and refused absolutely to allow me to proceed. An attempt was made to administer chloroform in the hope that it might relieve the spasmodic condition of the glottis, which was evidently present, and which probably gave rise to the excessive dyspnœa.

Sept. 4.—He was quieter this morning, but no improvement had taken place in his breathing; he desired to submit at once to the operation. Tracheotomy was therefore performed in the ordinary way; but in consequence of the swollen and inflamed condition of the skin, due to the local applications which had been employed, some difficulty was met with in reaching the trachea and in introducing the tube. Great relief was at once experienced, and a large quantity of tenacious mucus was expectorated through the tube.

5.—The patient passed a tolerably quiet night, but had very little sleep in consequence of being disturbed by removing the tenacious mucus from the tube. A piece of lint soaked in a carbolic acid lotion and lightly covered by cotton wool was placed over the orifice, care being taken not to exclude in any way the entrance of air, and a mixture containing sesquicarbonate of ammonia and tincture of cinchona was ordered.

7.—The patient had improved, the breathing was much easier; the granulations of the external wound were, however, more pressed upon by the flange of the tube; this was therefore removed and a larger one inserted. During the interval it was noticed that even when the external hole

was closed the patient experienced no difficulty in breathing, the laryngeal spasm having apparently disappeared. It was, however, considered advisable to reintroduce the tube, in case the symptoms should recur.

10.—The patient had now lost all distress in breathing; he had but little cough, and could speak more distinctly than before the operation. The tube was seen to be pushed forwards, but this gave rise to no discomfort.

12.—The tube was pushed still more forwards, and as no expectoration or air came through it, it was removed, and was found to have been lying in the loose cellular tissue external to the trachea; the orifice in the latter being much contracted, showed that the tube had left the trachea some days before its removal. The patient breathed perfectly tranquilly.

From this time he steadily improved with only an occasional and unimportant increase in his cough and expectoration. The external wound healed rapidly.

18.—Dr. Gibb made an extended exploration of his larynx, and noticed a relaxation of the vocal chords, which appeared small and atrophied. No ulceration was detected. An astringent lotion containing alum and sulphate of zinc (a.a. gr. iv. in f℥j.) was ordered to be applied daily in the form of spray, and a tonic mixture was prescribed. The patient's general health improved greatly, but no change was noticed in his voice which was still hoarse.

Dr. Marcet having expressed a wish to see the patient again, made a careful laryngoscopic examination on October 4, with a more powerful light than had been previously employed. A small point of ulceration was detected at the posterior part of the supra-glottic region. The chords were seen to be small, atrophied, and relaxed. A strong solution of nitrate of silver (gr. xl. to f℥j.) was applied to the larynx, giving rise to temporary distress. From this time considerable improvement in the voice took place, the application of nitrate of silver being repeated twice every week. In the early part of November the voice had much improved, but some hoarseness returned in damp and cold weather.

Since the patient ceased to attend regularly he has been much exposed to cold and wet, and has returned to his old habits of drinking, and has in consequence suffered from catarrh and bronchitis, and the hoarseness has returned, but appears upon laryngeal examination to be due solely to con-

gestion of the supra glottic mucous membrane and relaxation of the tensor muscles of the chords.

Remarks.—In all cases like the present, where laryngeal spasm rapidly supervenes upon symptoms of subacute laryngitis which have gradually become more intense, there is, I believe, no advantage to be gained by postponing the operation of tracheotomy. The distress and paroxysmal dyspnœa, though not extreme during the day, are always aggravated at night, or in the early morning, and the operation is rendered more difficult by the restless condition of the patient. The persistent application of counter-irritants to the skin is to be deprecated, as tending to keep up irritation without offering much chance of relief. The application of leeches and hot fomentations at the outset may be desirable, but the employment of blisters is a measure of doubtful value.

With regard to the operation itself, I have no hesitation in recommending tracheotomy in preference to laryngotomy. The history of these cases is usually obscure, there is often no opportunity of making a laryngeal examination, and the exact condition of the parts is therefore a matter of some doubt. Should the spasm be due to the presence of a tubercular, syphilitic, or even a simple ulcer, the additional irritation of the tube in the larynx is undesirable, whilst the advantages are not balanced by any valid arguments on the score of greater safety. The bronchitis and pneumonia, which are to be dreaded after operations upon the trachea, would probably follow those upon the larynx with equal frequency were the latter operations as commonly performed.

In the present case the use of carbolic acid vapour applied in a very dilute form at the orifice of the trachea tube, appeared to have a considerable effect in diminishing the bronchial expectoration, and in allaying the tendency to cough.

With regard to the length of time that the tube should be allowed to remain in the trachea in these cases, I am of opinion that it should not exceed a few days. In the present case it was, I believe, allowed to remain unnecessarily long, and that three or four days would have proved amply sufficient. I found this opinion upon the fact that the dyspnœa is due rather to spasm than to actual occlusion of the glottis by inflammatory swelling of the mucous and submucous tissues, and that a very brief period of functional inactivity suffices to allay this irritability. In this case, when the tube was being changed on the third day the patient breathed easily through the natural passage, and although another

tube was inserted, yet it did not remain for more than three days actually within the trachea, whilst the patient did not suffer any distress in consequence of its protrusion.

The condition present at the time of the operation was probably supra-glottic œdema with spasm of the muscles closing the glottis, especially the thyro-arytenoidei, as these were subsequently seen to be relaxed and flaccid. I should be inclined to refer the exciting cause of the spasm to the direct action of the air upon the inflamed mucous membrane, a condition which was at once relieved by the operation. The ulceration may have been present from the first, but if so it must have been concealed by the swollen condition of the mucous membrane. When detected, it appeared as a minute abrasion, and did not present any characters which would indicate a syphilitic or tubercular origin.

VII.—*A Case of Gun-shot Wound of the Leg; Amputation during Collapse, just below the Knee-joint; Traumatic Delirium; Fascial Abscesses of the Thigh; Recovery.* By JOHN CROUCH. *Communicated by* MR. CALLENDER. *Read December* 11, 1868.

THE subject of this severe accident was a male aged 21. On a cold day in November he was shooting on one of the highest hills in Somersetshire, when he received the contents of both barrels in the front part of the left shin.

With great presence of mind, the patient took a strong silk pocket-handkerchief, and tied it tightly round the bleeding limb. Being of spare frame, the hæmorrhage was completely stopped by the pressure. For two hours he lay on the ground, waiting for a conveyance and for surgical assistance. It was three hours from the time of the accident before he was taken to his father's house. The pulse was then imperceptible at the wrists; there was constant vomiting and rejection of brandy and other stimulants. There was a large torn wound in the front of the tibia and two openings in the skin behind, the charges of shot having been divided by the tibia. Both bones of the leg were extensively comminuted in their upper and middle thirds, and the tibial arteries did not pulsate. A consultation was held, when it was determined to amputate.

Five hours after the accident the operation was performed by a circular incision, and, with the last sweep of the knife, I separated the head of the fibula from its attachment to the tibia, and divided the hamstring muscles. I had only one artery to take up—the popliteal—and very little blood was lost. The patient was placed in bed, and passed an anxious night. He took a large quantity of stimulants, but at six o'clock in the morning his wrists were still pulseless, after which the vomiting, thus far very troublesome, ceased, the warmth of the hands and foot increased, and the pulse became perceptible at the wrist. He passed a tolerably good day, but in the evening he was seized with a most violent attack of traumatic delirium. At a consultation it was decided to give the patient forty drops of laudanum every four hours, which dose was continued during the following day without much relief. The delirium increased the succeeding night, and I took upon myself the responsibility of doubling the dose of laudanum. I gave the patient ninety minims of the tincture of opium in brandy and water.

Soon after this he feel asleep, and obtained rest until six o'clock the next morning, when he awoke quiet and much refreshed.

From this time the case went on favourably till the end of a month, when three large abscesses formed in the fascial bags of the thigh above the stump, and more than a pint of matter was let out from each abscess by means of the lancet. From this time he steadily recovered, and in due course was able to resume his University studies.

It will be seen by the preparation offered for the inspection of the Society that the tibia was fractured into ten pieces and the fibula into three. The dried integument of the leg shows in front the large opening by which the charges entered, and two smaller ones behind by which they passed out.

VIII.—*Report of a Case of Diabetes Mellitus successfully treated by Opium without restriction of Diet.* By F. W. Pavy, M.D. *Read December* 11, 1868.

SARAH P., aged 68, sent to Guy's Hospital to be placed under my care by Mr. Frederick Toulmin, of Upper Clapton, and admitted into Miriam Ward May 25, 1868.

History.—A single woman, who, previous to being affected

with her present complaint, has enjoyed good health, and who has followed, for many years past, the occupation of a nurse in private families. Her father died at the age of 83 of paralysis, and her mother at 64 of a cause unknown to her. She is the eldest of a family of ten, six of whom are still living. Four years back she began to experience an inordinate sensation of thirst and hunger, and two years ago it was ascertained that she was suffering from diabetes mellitus. Has since been passing about five pints of urine a day, and with this has been gradually losing flesh and strength, through which she has become too weak to follow her usual employment.

State upon Admission.—A spare woman but by no means remarkably so for her age. Complains of general languor accompanied with pains in her loins. Frequently experiences a sensation of giddiness, and says that her thirst and appetite are excessive. Her urine upon being examined was found to give a strong reaction of sugar, but yielded no indication of the presence of albumen. Heart and lungs healthy, and no evidence of the existence of any disease besides that for which she was admitted.

Progress of Case.—It having been ascertained that the patient was suffering from the disease for which she had been sent to the hospital, she was directed to collect the whole of the urine passed and measure it for every 24 hours, preserving a specimen for the purpose of being subjected to chemical examination. She was placed upon a mixed diet, viz. the ordinary middle diet of the hospital with a substitution of a chop for the 4 oz. of dressed meat customarily supplied. Her diet thus included an allowance of bread, potatoes, and beer. She was also ordered 4 oz. of brandy and 2 bottles of soda-water per diem, and this mode of living was continued as long as she remained in the hospital.

Upon the day of admission a draught was ordered consisting of 10 grains of the bicarb. of potash, ʒss. of the aromatic spirit of ammonia, and ʒi. of the infusion of calumba, to be taken three times a day. This I had intended to have been omitted when the opium was commenced, but to my surprise I found, just before the patient was discharged from the hospital, that it had been, through a misunderstanding, continued throughout the treatment.

The opium given was in the form of a pill three times a day, and the amount administered per diem is mentioned in the following daily account:—

DAILY REPORT OF THE STATE OF THE URINE AND THE AMOUNT OF OPIUM ADMINISTERED IN THE CASE OF SARAH P., AGED 68, A DIABETIC.

Date	Quantity of Urine per 24 hours, in ounces	Sp. Gr. of Urine	Quantity of Sugar per fluid-ounce of Urine, in grains	Quantity of Sugar per 24 hours, in grains	Quantity of Opium administered per diem
May 26 . .	100	1040	32¾	3275	None
„ 27 . .	90	1045	45	4050	1½ grains
„ 28 . .	80	1042	45	3600	„
„ 29 . .	80	1042	48	3840	„
„ 30 . .	80	1044	49	3920	3 grains
„ 31 . .	?	?	?	?	„
June 1 . .	70	1042	48	3360	„
„ 2 . .	70	1042	45	3150	„
„ 3 . .	75	1044	42½	3187	4½ grains
„ 4 . .	90	1039	42½	3825	„
„ 5 . .	70	1041	45	3150	„
„ 6 . .	70	1043	48	3360	6 grains
„ 7 . .	70	1040	42½	2975	„
„ 8 . .	60	1044	40	2400	„
„ 9 . .	50	1040	40	2000	„
„ 10 . .	50	1039	40	2000	7½ grains
„ 11 . .	65	1038	38	2470	„
„ 12 . .	50	1040	40	2000	„
„ 13 . .	50	1037	38	1900	9 grains
„ 14 . .	55	1042	32¾	1801	„
„ 15 . .	50	1039	36	1800	10½ grains
„ 16 . .	30	1042	34¼	1027	None
„ 17 . .	35	1040	31¼	1093	„
„ 18 . .	30	1043	28¾	862	„
„ 19 . .	30	1039	27½	825	„
„ 20 . .	30	?	42¼	1267	„
„ 21 . .	35	1046	48	1680	3 grains
„ 22 . .	30	1038	26½	795	„
„ 23 . .	35	1047	45	1575	„
„ 24 . .	35	1043	37¾	1321	„
„ 25 . .	40	1048	34¼	1370	„
„ 26 . .	35	1045	37¾	1321	„
„ 27 . .	30	1042	36	1080	„
„ 28 . .	40	1043	45	1800	„
„ 29 . .	35	1021	14¼	498	4½ grains
„ 30 . .	40	1036	24	960	„
July 1 . .	40	1037	30	1200	„
„ 2 . .	40	1038	28¾	1150	„
„ 3 . .	40	1039	34¼	1370	„
„ 4 . .	50	1040	32¾	1637	6 grains
„ 5 . .	60	1042	36	2160	„
„ 6 . .	40	1041	32¾	1310	„
„ 7 . .	40	1040	36	1440	7½ grains
„ 8 . .	30	1033	23¼	697	„
„ 9 . .	40	1038	22½	900	„
„ 10 . .	35	1034	16½	577	9 grains
„ 11 . .	30	1042	24	720	„
„ 12 . .	30	1040	30	900	7½ grains
„ 13 . .	30	1037	28¾	862	„

Date	Quantity of Urine per 24 hours, in ounces	Sp. Gr. of Urine	Quantity of Sugar per fluid-ounce of Urine, in grains	Quantity of Sugar per 24 hours, in grains	Quantity of Opium administered per diem
July 14 . .	30	1040	28¾	862	9 grains
„ 15 . .	25	1040	28¾	718	„
„ 16 . .	30	1036	28¾	862	„
„ 17 . .	25	1039	24	600	„
„ 18 . .	30	1040	28¾	862	„
„ 20 . .	25	1039	27½	687	„
„ 21 . .	30	1038	25¾	772	„
„ 22 . .	25	1035	14½	362	„
„ 23 . .	25	1039	19	475	„
„ 24 . .	30	1034	21¾	652	„
„ 25 . .	30	1033	15¼	457	„
„ 26 . .	30	1030	16	480	„
„ 27 . .	35	1015	4¾	166	„
„ 28 . .	25	1027	None	...	„
„ 29 . .	20	1028	7¼	145	„
„ 30 . .	25	1031	14½	362	„
„ 31 . .	30	1027	11¼	337	„
August 1 .	20	1023	Trace	...	„
„ 2 .	25	1022	None	...	„
„ 3 .	30	1020	„	...	„
„ 4 .	25	1020	„	...	„
„ 5 .	20	1023	„	...	„
„ 6 .	25	1020	Trace	...	„
„ 7 .	30	1016	None	...	„
„ 8 .	30	1017	„	...	„
„ 9 .	25	1018	„	...	„
„ 10 .	35	1014	„	...	„
„ 11 .	30	1024	„	...	„
„ 12 .	30	1020	„	...	12 grains
„ 13 .	35	1014	Trace	...	„
„ 14 .	40	1017	None	...	„
„ 15 .	30	1017	„	...	„
„ 16 .	30	1017	„	...	„
„ 17 .	30	1020	Trace	...	„
„ 18 .	35	1013	„	...	„
„ 19 .	30	1015	„	...	„
„ 20 .	40	1016	None	...	„
„ 21 .	35	1016	„	...	„
„ 22 .	40	1016	Trace	...	„
„ 23 .	40	1020	None	...	„
„ 24 .	40	1016	„	...	„
„ 25 .	40	1015	„	...	„
„ 26 .	35	1014	„	...	„
„ 27 .	40	1012	„	...	„
„ 28 .	35	1015	„	...	„
„ 29 .	40	1011	„	...	„
„ 30 .	40	1015	„	...	„
„ 31 .	35	1013	„	...	„
September 1	30	1018	„	...	„
„ 2	25	1020	„	...	„
„ 3	40	1016	„	...	„
„ 4	35	1020	„	...	„

Date	Quantity of Urine per 24 hours, in ounces	Sp. Gr. of Urine	Quantity of Sugar per fluid-ounce of Urine, in grains	Quantity of Sugar per 24 hours, in grains	Quantity of Opium administered per diem
September 5	30	1016	None	...	12 grains
,, 6	45	1017	,,	...	,,
,, 7	35	1016	,,	...	9 grains
,, 8	30	1020	,,	...	,,
,, 9	40	1016	,,	...	,,
,, 10	35	1018	,,	...	,,
,, 11	40	1016	,,	...	,,
,, 12	40	1017	,,	...	,,
,, 13	35	1018	,,	...	,,
,, 14	40	1019	,,	...	,,
,, 15	35	1019	,,	...	,,
,, 16	40	1017	,,	...	,,
,, 17	40	1017	,,	...	,,
,, 18	40	1017	,,	...	,,
,, 19	40	1016	,,	...	,,
,, 20	50	1021	,,	...	,,
,, 21	55	1019	,,	...	,,
,, 22	50	1019	,,	...	,,
,, 23	40	1016	,,	...	,,
,, 24	45	1016	,,	...	,,
,, 25	45	1017	,,	...	,,
,, 26	50	1016	,,	...	6 grains
,, 27	45	1020	,,	...	,,
,, 28	40	1019	,,	...	,,
,, 29	50	1018	,,	...	,,
,, 30	40	1019	,,	...	,,
October 1 .	50	1018	,,	...	,,
,, 2 .	45	1019	,,	...	,,
,, 3 .	40	1015	,,	...	,,
,, 4 .	45	1017	,,	...	,,
,, 5 .	50	1017	,,	...	,,
,, 7 .	?	?	...	...	3 grains
,, 11 .	45	1020	None	...	,,
,, 12 .	50	1014	,,	...	,,
,, 13 .	50	1021	,,	...	,,
,, 14 .	40	1020	,,	...	,,
,, 15 .	50	1020	,,	...	,,
,, 16 .	45	1018	,,	...	,,
,, 17 .	40	1019	,,	...	None
,, 18 .	50	1020	,,	...	,,
,, 19 .	45	1021	,,	...	,,
,, 20 .	55	1015	,,	...	,,
,, 21 .	40	1022	,,	...	,,
,, 22 .	30	1025	,,	...	,,
,, 24 .	40	1030	,,	...	,,
,, 25 .	35	1020	,,	...	,,
,, 26 .	45	1030	,,	...	,,
,, 27 .	35	1019	,,	...	,,
,, 28 .	40	1025	,,	...	,,

Remarks.—It will be noticed from the preceding report that the first effect of the opium was to diminish in a notable

manner the amount of urine passed. The degree of saturation with sugar remained for a time about the same, but through the fall in the amount of urine the quantity of sugar for the 24 hours showed a decline. Within three weeks the quantity of opium administered was raised to 10½ grains per diem. It was then suddenly discontinued on account of a greater degree of drowsiness than was desirable being produced. At first its omission was not attended with any falling back in the state of the urine; indeed, the sugar still continued diminishing for a day or two, but on the fifth day the degree of saturation with sugar rose, and on the day following was higher still. The opium was then recommenced and the dose gradually raised to 9 grains per diem, which it was found could be now easily borne. Under its administration to this extent the sugar gradually declined until it was lost altogether. The 9 grains, however, were still continued for several days, and then a further increase made to 12 grains per diem, which, as far as soporific effect was concerned, only produced a sounder sleep at night than the patient had been in the habit of procuring. After the urine had been for some time free from sugar I tried the effect of reducing the amount of opium, and finding that no sugar reappeared the reduction was carried on until finally all was taken off without any return of sugar being observed.

With the improvement in the state of the urine there was a corresponding improvement in the health and strength of the patient, who ultimately expressed herself as feeling perfectly well in every respect. She remained in the hospital for 11 days after all the opium had been taken off; and being then anxious to return to her home she was discharged, and directed to come occasionally in order that the progress of her case might still be watched. I have seen her several times since her discharge from the hospital, and upon each occasion the urine has been found devoid of sugar. She has been taking no medicine of any kind, and has been living, she informs me, precisely as she was in the habit of doing before she became affected with the complaint. She came, as I requested, to the hospital this morning (Dec. 11), and I have with me a specimen of urine which I desired her to pass for examination during her visit, and which upon being tested with the cupro-potassic solution gives no reaction (as was shown to the members of the Society) of the presence of sugar. The patient is also present in the adjoining room for the purpose of being seen and answering any questions that may be put to her.

Beyond the influence exerted on the disease, and besides the drowsiness at one time observed, there was no visible effect produced by the opium upon the patient. The dose at the commencement had been rapidly increased and a soporific effect was thereby occasioned which necessitated its discontinuance for a short while; but upon its subsequent administration in more gradually increased doses it was borne without any inconvenience being complained of. It may be here remarked that there is a greater tolerance of opium in diabetes than under ordinary conditions, and from what I have observed, the more intense the disease the larger the dose that can be given. In some cases amongst elderly people I have seen a small dose suffice to produce the ordinary effect upon the cerebral functions. It is therefore always necessary to begin and proceed with caution.

Throughout the treatment of the case there was no constipation produced, and this absence of constipating effect I have noticed upon other occasions where opium has been given in diabetes.

It was certainly to be regretted that the mistake arose by which the alkaline mixture was continued in conjunction with the opium. From my experience, however, with other cases I am perfectly satisfied that although some assistance may have been afforded by it, the main result was owing to the opium, and this is confirmed by the following case which was under treatment in the hospital at the same time:—

John D., aged 50, a patient suffering from a severe form of diabetes. Under a restricted diet the sugar had been brought down to about 1,000 grains per diem. Opium in gradually increased doses was then administered without any other medicinal agent, and the restricted diet persevered with. When the quantity of opium administered had reached $10\frac{1}{2}$ grains per diem, the sugar disappeared and remained absent for several days. The urine again becoming charged to some extent with sugar the quantity of opium was increased, and ultimately as much as 18 grains per diem were administered. The urine now was devoid of sugar and of a specific gravity varying between 1025 and 1028, and from $1\frac{1}{2}$ to $1\frac{3}{4}$ pints in quantity for the 24 hours. This state having been observed for a few days the opium was suddenly discontinued, and ℥j. of aq. camphoræ given three times a day instead, in order that the patient might feel that he was still being subjected to medical treatment. The following report shows the

state of the urine from day to day until the opium was re-administered. The day with which the report begins, viz. June 10, was that upon which the opium was taken off.

Date	Quantity of Urine per 24 hours, in ounces	Sp. Gr.	Quantity of Sugar per fluid ounce, in grains	Quantity of Sugar per 24 hours, in grains
June 10 . .	30	1025	None	...
„ 11 . .	35	1025	Trace	...
„ 12 . .	35	1032	4	140
„ 13 . .	30	1036	4	120
„ 14 . .	40	1032	8½	340
„ 15 . .	40	1037	20	800
„ 16 . .	35	1037	11½	402
„ 17 . .	40	1048	26½	1060
„ 18 . .	40	1041	17	680
„ 19 . .	35	1040	17½	612
„ 20 . .	40	1036	18	720
„ 22 . .	50	1042	34¼	1712
„ 23 . .	50	1040	23¼	1162
„ 24 . .	60	1038	24	1440

Upon the last day mentioned above, the administration of opium was recommenced, and as the dose was increased so the sugar again declined. By July 22 the quantity administered amounted to 18 grs. per diem. The state of the urine was now as follows:—

Date	Quantity of Urine per 24 hours, in ounces	Sp. Gr.	Quantity of Sugar per fluid ounce, in grains	Quantity of Sugar per 24 hours, in grains
July 22 . . .	35	1033	10¾	368
„ 23 . . .	40	1032	6¼	250
„ 24 . . .	35	1030	Trace	...
„ 25 . . .	40	1021	None	...

The patient after this passed again a little sugar, and it was discovered that he was not adhering strictly to the diet that had been ordered. He had been in the hospital for some time, and had several times expressed a desire to be allowed to return home to his family. Feeling in himself quite well he could not be made to realise that he had not been perfectly cured, and thus became less scrupulous in observing his rules of diet. Under these circumstances he was discharged. Some time afterwards he came to me amongst the out-patients. After leaving the hospital, he had discontinued all treatment, and resumed an ordinary diet, and as a consequence, in his kind of case, his old symptoms returned, and his urine became again highly charged with sugar.

I may refer to another case in which morphia instead of opium was given. The patient was passing, upon admission into the hospital upon an ordinary diet, from eight to ten pints of urine a day, containing about eight to nine thousand grains of sugar. Under a restricted diet and an alkaline mixture the urine became reduced to four and five pints, and the sugar to about 1,500 grains a day. The mixture was discontinued, and the hydrochlorate of morphia given, at first in half grain doses, three times a day. The dose was increased, and in about two months' time, nine grains per diem were being administered. The urine now fluctuated between three and four pints a day; the sp. gr. which before the morphia was given had averaged 1028 to 1030 decreased and averaged about 1018 to 1020, and for several days before the patient left the hospital, which he did suddenly on account of some disagreement that arose in the ward, no sugar was passed.

M'Gregor, as far back as the year 1837, published in the 'London Medical Gazette,' a record of two cases in which opium had been given in large doses with the effect of producing for a time a marked palliation of the disease. M'Gregor in one of his cases increased the quantity of opium till it reached ninety grains per diem. By modern practitioners opium has also been generally looked upon as exerting a favourable influence in the disease; but I am not aware that direct evidence of its controlling influence, such as is supplied by this communication, has been hitherto placed upon record. There is still much to be learnt about its extent of power in different cases. My belief is from the case which forms the basis of this communication, and other experience I have had, that it will be found sufficient in many instances amongst elderly subjects, where the disease is observed to assume its mildest form, to check by itself the elimination of sugar. In young and middle-aged subjects, however, where the disease, as a rule, assumes a much more severe character, it would seem that to obtain this result the restricted diet must be conjoined.

May 28, 1869.—This patient again appeared before the Society, in order that the progress of her case might be made known up to the last meeting of the session. She expressed herself as enjoying perfect health, and during the last three months had been carrying on her usual avocation as a nurse. She experienced no thirst and passed a natural quantity of urine. The specimen of urine brought for examination presented a sp. gr. of 1020 and gave no reaction

of sugar. Since her case had been related to the Society she had also attended once a month at the hospital, and each time her urine was found to be devoid of sugar.

Read May 28, 1869.

The following case is presented as an addendum to my communication on the treatment of diabetes by opium. It in the most striking manner exemplifies the power enjoyed both by opium and morphia in controlling the elimination of sugar. The subject is a middle-aged person who upon admission into the hospital was suffering in a severe manner from the complaint. During the first few days he was placed upon an ordinary mixed diet, and the state of his urine was as follows :—

Date	Quantity of Urine in fluid-ounces	Sp. Gr.	Quantity of Sugar per diem, in grains
November 20 . . .	200	1036	7200
„ 21 . . .	270	1033	12150
„ 22 . . .	260	1038	11700

Under a restricted diet the urine was reduced in quantity to from 100 to 120 ounces, and the sugar to about 3,000 grains per diem. Morphia was administered in gradually increasing doses. The quantity of urine and sugar fell, and the latter ultimately disappeared. The morphia was next suddenly discontinued and the urine remained free from sugar for about a week. Sugar now reappeared in the urine and opium was then administered in the place of morphia. For awhile the sugar went on increasing, but afterwards it began to fall, and ultimately again was observed to disappear. The details of the case are supplied by the following report.

Robert J., aged 29, admitted into Guy's Hospital under my care November 18, 1868. Has been gaining his living as an insurance agent, and as such has had no fixed place of abode. He is a dark complexioned man, of middle stature and inclining to spareness, but without presenting an actually emaciated appearance. Began to suffer from diabetes about nine months back, and grew rapidly weaker and thinner in comparison with his previous state. Was now admitted into the Tunbridge Wells Infirmary, where his condition improved. Grew worse again on his discharge, and continued to fall back until his admission into Guy's Hospital. His case was found to be an ordinary one of diabetes without

any associated complication. He was in the hospital for seven weeks under different kinds of medical treatment before the morphia and opium treatment was commenced, and during this time, with the exception of the first few days, he was kept upon a restricted diet, bran biscuit forming the substitute for ordinary bread. This diet he was ordered to adhere to. The following is a daily record of the state of the urine and the amount of morphia and opium administered:—

Date	Quantity of Urine per 24 hours, in fluid ounces	Sp. Gr.	Quantity of Sugar per fluid ounce, in grains	Quantity of Sugar per 24 hours, in grains	Quantity of Morphia or Opium administered per diem
January 9 .	115	1035	26¾	3076	1 grain morph. hyd.
„ 10 .	110	1042	28¾	3162	„ „
„ 11 .	100	1038	27½	2750	„ „
„ 12 .	100	1039	22½	2250	1½ grains „
„ 13 .	95	1034	27½	2612	„ „
„ 14 .	90	1037	23¼	2092	„ „
„ 15 .	90	1037	26½	2385	2¼ „ „
„ 16 .	80	1035	19½	1560	„ „
„ 17 .	80	1039	19½	1560	„ „
„ 18 .	70	1042	21¾	1522	„ „
„ 19 .	60	1039	17	1020	„ „
„ 20 .	60	1035	18	1080	„ „
„ 21 .	65	1040	25¾	1673	3 „ „
„ 22 .	60	1040	19	1140	„ „
„ 23 .	55	1032	5¾	316	„ „
„ 24 .	60	1038	13¼	795	„ „
„ 25 .	60	1036	19	1140	„ „
„ 26 .	65	1034	3¼	211	3¾ „ „
„ 27 .	60	1035	2½	150	„ „
„ 28 .	70	1040	23¼	*1627	„ „
„ 29 .	20	1037	16	320	„ „
„ 30 .	30	1034	2½	75	„ „
„ 31 .	30	1040	12	360	4½ „ „
February 1 .	30	1037	3½	105	„ „
„ 2 .	35	1039	4	140	„ „
„ 3 .	30	1035	Trace	...	„ „
„ 4 .	30	1037	12½	375	„ „
„ 5 .	40	1035	12	480	„ „
„ 6 .	30	1033	None	...	5¼ „ „
„ 7 .	30	1036	„	...	„ „
„ 8 .	35	1035	„	...	„ „
„ 9 .	35	1031	„	...	„ „
„ 10 .	40	1033	„	...	„ „
„ 11 .	44	1030	„	...	„ „
„ 12 .	40	1031	„	...	„ „
„ 13 .	35	1032	„	...	„ „
„ 14 .	35	1030	„	...	„ „
„ 15 .	30	?	„	...	„ „

* The patient to-day deviated from his instructions, and partook of some rice pudding.

Date	Quantity of Urine per 24 hours, in fluid ounces	Sp. Gr.	Quantity of Sugar per fluid ounce, in grains	Quantity of Sugar per 24 hours, in grains	Quantity of Morphia or Opium administered per diem
February 16	30	1035	$4\frac{3}{4}$	142	$5\frac{1}{4}$ grains morph. hyd.
,, 17	30	1035	None	...	,, ,,
,, 18	40	1030	,,	...	,, ,,
,, 19	30	1027	,,	...	,, ,,
,, 20	40	1029	,,	...	,, ,,
,, 23	35	1023	,,	...	,, ,,
,, 24	30	1030	,,	...	,, ,,
,, 25	30	1032	,,	...	,, ,,
,, 26	30	1029	,,	...	,, ,,
,, 27	26	1026	,,	...	,, ,,
March 1 .	30	1025	,,	...	,, ,,
,, 2 .	32	1030	,,	...	,, ,,
,, 3 .	30	1029	,,	...	,, ,,
,, 4 .	30	1030	,,	...	None
,, 5 .	?	1032	,,	...	,,
,, 6 .	?	1033	,,	...	,,
,, 7 .	30	1034	,,	...	,,
,, 8 .	32	1032	,,	...	,,
,, 9 .	30	1035	Trace	...	,,
,, 10 .	33	1036	None	...	,,
,, 11 .	30	1038	Trace	...	,,
,, 12 .	35	1041	18	630	,,
,, 13 .	30	1040	12	360	$1\frac{1}{2}$ grain opium
,, 14 .	36	1048	$22\frac{1}{2}$	810	,, ,,
,, 15 .	48	1043	$21\frac{3}{4}$	1044	,, ,,
,, 16 .	46	1045	$25\frac{3}{4}$	1184	,, ,,
,, 17 .	50	1047	$27\frac{1}{2}$	1375	$2\frac{1}{4}$ grains ,,
,, 18 .	55	1042	$24\frac{3}{4}$	1361	,, ,,
,, 19 .	50	1045	$28\frac{3}{4}$	1437	3 ,, ,,
,, 20 .	58	1044	$28\frac{3}{4}$	1667	,, ,,
,, 21 .	55	1032	$27\frac{1}{2}$	1512	$4\frac{1}{2}$,, ,,
,, 22 .	57	1038	16	912	,, ,,
,, 23 .	46	1041	24	1104	,, ,,
,, 24 .	55	1038	$19\frac{1}{2}$	1072	6 ,, ,,
,, 25 .	70	1040	$26\frac{1}{2}$	1855	,, ,,
,, 26 .	75	1033	$24\frac{3}{4}$	1856	,, ,,
,, 27 .	60	1040	30	1800	,, ,,
,, 28 .	50	1041	$26\frac{1}{2}$	1325	$7\frac{1}{2}$,, ,,
,, 29 .	55	1045	24	1320	,, ,,
,, 30 .	45	1040	$22\frac{1}{2}$	1012	$7\frac{1}{2}$,, ,,
,, 31 .	40	1040	19	760	9 ,, ,,
April 1 .	43	1037	$14\frac{1}{2}$	623	,, ,,
,, 2 .	45	1040	$15\frac{1}{2}$	697	$10\frac{1}{2}$,, ,,
,, 3 .	47	1038	$11\frac{1}{2}$	540	,, ,,
,, 4 .	40	1040	$17\frac{1}{2}$	700	12 ,, ,,
,, 5 .	35	1037	$10\frac{1}{2}$	367	,, ,,
,, 6 .	33	1037	$10\frac{1}{2}$	346	,, ,,
,, 7 .	36	1038	$16\frac{1}{2}$	585	,, ,,
,, 8 .	32	1040	$16\frac{3}{4}$	536	$13\frac{1}{2}$,, ,,
,, 9 .	40	1032	Trace	...	,, ,,
,, 10 .	35	1031	,,	...	,, ,,
,, 11 .	30	1035	None	...	,, ,,

Date	Quantity of Urine per 24 hours, in fluid ounces	Sp. Gr.	Quantity of Sugar per fluid ounce, in grains	Quantity of Sugar per 24 hours, in grains	Quantity of Morphia or Opium administered per diem
April 12 . .	26	1033	None	...	13½ grains opium
„ 13 . .	26	1033	„	...	„ „
„ 14 . .	28	1033	„	...	„ „
„ 15 . .	25	1034	Trace	...	„ „
„ 16 . .	30	1034	None	...	„ „
„ 17 . .	28	1035	„	...	„ „
„ 18 . .	26	1037	„	...	„ „
„ 19 . .	28	1036	„	...	„ „
„ 20 . .	30	1036	Trace	...	„ „
„ 21 . .	30	1034	None	...	„ „
„ 22 . .	32	1037	„	...	„ „
„ 23 . .	30	1035	„	...	15 „ „
„ 24 . .	28	1030	„	...	„ „
„ 25 . .	33	1032	„	...	16½ „ „
„ 26 . .	33	1032	„	...	„ „
„ 27 . .	33	1033	„	...	„ „
„ 28 . .	28	1035	„	...	„ „
„ 29 . .	30	?	„	...	18 „ „
„ 30 . .	28	1034	„	...	„ „

I consider it unnecessary to continue the daily report further. Suffice it to say that up to the date of the case being communicated to the Society, the urine has continued devoid of sugar, and this notwithstanding that four ounces of ordinary bread have been consumed by the patient daily during the last fortnight. The quantity of opium that is now being administered per diem is 22½ grains, and I purpose still increasing it with the view of ascertaining if under its influence an ordinary mixed diet can be taken without a reappearance of sugar. At present we are working upon new ground, and must wait for further observation to disclose the full extent of our position. The patient is in good condition and has gained 16½ lbs. in weight since admission. Throughout the treatment no constipation has been produced by either the morphia or opium.

IX.—*Irritative Hypertrophy of the Heart.* By Thomas Henry Green, M.D. *Read December* 11, 1868.

By the term irritative hypertrophy, I mean increased development as the result of some abnormal irritation as distinguished from hypertrophy from excessive physiological stimulus.

Following the teaching of Prof. Virchow, and admitting the identity of the two pathological processes which constitute on the one hand hypertrophy, and on the other the first stage of inflammation—the amount and nature of the irritation determining the ultimate result—my object in the present communication is to endeavour to show that the heart may under conditions of abnormal irritation become hypertrophied, and if the irritation be sufficiently severe the seat of an inflammatory process.

The term hypertrophy I use in its broad signification, as including not merely enlargement of pre-existing elements but the production of new ones. The newly developed elements may be precisely similar to those from which they were produced, in which case the motor power of the organ will be increased; or they may be inferior to them as regards their vitality and functional activity, in which case the motor power may be diminished, and dilatation of the cavities will probably ensue. As to the nature of the irritant, I believe it to be identical with that which produces endo- and pericarditis; this form of hypertrophy, like these affections, being especially associated with acute rheumatism.

The observations which form the basis of this paper have been made exclusively in children, and mostly in those between six and fourteen years of age. They have been purely clinical; in only one case have I had the opportunity of confirming them by a post-mortem examination.

In organic valvular disease of the heart, so frequently met with in children, the concomitant hypertrophy and dilatation are usually looked upon as the direct result of the valvular affection, their amount being a measure of the extent to which the function of the valves is interfered with. Whilst admitting that this relation between the hypertrophy and the valvular disease holds good in many, and perhaps in the majority of cases, I venture to question whether it does so in all, and I would suggest that, in some cases at least, the cardiac enlargement is due either in whole or in part to an irritative hypertrophy of the organ.

In support of this view I shall endeavour to substantiate the following four propositions: *—

I.—In organic valvular disease of the heart the hypertrophy is sometimes disproportionate to the valvular affection.

* In the following considerations a diffused and distinctly heaving cardiac impulse is taken as the evidence of hypertrophy.

It is not uncommon to meet with children, especially between the ages of six and twelve, who have undoubted mitral insufficiency associated with more or less diffused and heaving cardiac impulse, but in whom, nevertheless, there are no symptoms of cardiac disease—who are, in short, as regards the cardiac affection practically well. I presume that no one will question the truth of the proposition that a very slight insufficiency of the mitral valve may be the cause of a very marked systolic bruit, and if the hypertrophy is due to the insufficiency alone, we may look upon its amount as a measure of the extent to which the valve is affected. But if the insufficiency be sufficient materially to interfere with function, there will be, in addition to the compensatory hypertrophy, symptoms directly referable to interference with the circulation, viz., dyspnœa, an arterial pulse, irregular in force and rhythm, or even signs of pulmonary congestion. Consequently, in those cases of mitral disease in which the symptoms referable to this condition are entirely wanting, but in which there is undoubted evidence of enlargement of the heart, I am inclined to look upon this enlargement as in part due to an irritative hypertrophy of the organ.

II.—Hypertrophy of the heart may exist without any evidence of valvular affection, or of other obstruction in the course of the circulation.

Cases are occasionally met with in which there is a heaving and slightly diffused cardiac impulse, but in which the heart sounds are perfectly healthy, and no bruit is audible. I am aware that in such cases as these it may be said that some imperfection in one of the valves exists, and that the cardiac enlargement is a compensatory one, but that owing to the healthy state of the blood no murmur is generated. Here, also, I would suggest that the hypertrophy owes its origin to an irritation probably associated with a previous attack of acute rheumatism.

III.—The evidence of hypertrophy may diminish, or even entirely disappear, as the child grows older.

The truth of this proposition I cannot support by many observed cases. I have, however, seen two or three children, between the ages of eight and twelve years, in whom there was a heaving cardiac impulse, accompanied by a faint systolic apex bruit, but with the entire absence of cardiac

symptoms, and in whom, after the lapse of two years, the heaving character of the impulse, and all other evidence of enlargement of the heart, had entirely disappeared, although the systolic bruit remained.

In these cases also I look upon the hypertrophy as owing to the irritation associated with the previous rheumatic attacks, and its disappearance I would account for as being due to the gradual adaptation of the size of the heart to the increasing size of the child, the heart being, so to speak, prematurely developed.

IV.—Undoubted proofs exist that the muscular tissue of the heart may be the seat of an inflammatory process.*

Carditis or myocarditis, as it has been termed, is most frequently met with as a concomitant of endo- or pericarditis: that layer of muscular fibres which is adjacent to the peri- or endocardium, is especially liable to this acute change, although in some cases the muscular tissue generally may be affected. The fibres become pale, swollen, friable, softened, and granular. Whether this condition is always the result of an active process, a true inflammation, or whether it is not often passive, an acute degeneration, I shall not here discuss, although I believe it to be, in a majority of cases, of the former nature.

The following case will partially illustrate some of the foregoing propositions. I am indebted to the kindness of Dr. Johnson and Dr. Headland, under whose care the patient had been in King's and Charing Cross Hospital, for allowing me to utilise the case, the notes of which, however, were unfortunately somewhat incomplete:—

Case.—S. C., a girl aged 15 years, was admitted into King's College Hospital, in October 1867, under the care of Dr. Johnson, suffering from acute rheumatism. On three former occasions she had been the subject of the same disease, the first attack having been five years previously, the second two, and the third one year previously. In this, the fourth attack, the joint affection was considerable. The area of cardiac dullness was increased, the impulse was diffused, and there was a slight systolic apex bruit, and also a faint murmur audible at the base. From this attack she recovered, and left the hospital. One year subsequently, on August 15 last, she had a fifth attack, and was admitted into Charing Cross

* See 'Untersuchungen über die Myocarditis, von Dr. H. Stein.'

Hospital under the care of Dr. Headland. In the interval, with the exception of slight palpitation and shortness of breath, she appears to have been comparatively well. Upon this occasion the joint affection was less severe.

As before, there was distinct evidence of enlargement of the heart, and a systolic apex murmur; no bruit was, however, audible at the base. About six weeks after admission pericarditis supervened, and slight effusion into the pericardium took place, which was quickly absorbed. The girl now gradually but rapidly got worse, the dyspnœa became most urgent, the heart's action was rapid, feeble, and irregular; she presented, in short, the symptoms of extensive mitral disease. On October 23, two weeks after the occurrence of the pericarditis, she died.

At the post-mortem examination, when she for the first time came under my own observation, the following appearances were observed:—

The two surfaces of the pericardium were universally adherent; the adhesions were not recent, but still not sufficiently old to prevent the heart from being readily enucleated. The heart itself was considerably enlarged, the cavities were dilated, the walls much thickened. The hypertrophy of the walls was uniform, and was proportionately as great on the right side as on the left. On section the muscular substance was pale and cloudy, and broke with a soft granular fracture. There was no mottling, the change being uniform and universal.

Under the microscope, the muscular fibres everywhere had lost their striated appearance, and were finely granular; there were no fat molecules. This condition was not more marked in one part than in another, the central parts of the walls and the papillary muscles being as much affected as those parts adjacent to the pericardium. There was no increase in the amount of connective tissue. The mitral valve was perfectly healthy; there was no shortening of the chordæ tendineæ; the opening was perhaps rather larger than natural, as was also that of the tricuspid. The aortic valve was competent, there was slight thickening of the edge of the central flap. The lungs were congested, there was no rupture of capillaries. The kidneys, with the exception of slight recent swelling of the cortices, were healthy.

Here, then, is a case of considerable enlargement of the heart in a young girl without any valvular disease, except a slight thickening of a portion of the aortic valve, which

could not have materially interfered with its function, and without organic disease of the kidneys.

Moreover the hypertrophy affected both sides equally, and it evidently existed when she was admitted into King's College Hospital one year before her death. With regard to the regurgitation through the mitral orifice, which undoubtedly took place, it must be looked upon as secondary to the cardiac enlargement, and its occurrence is probably explained, as suggested by Dr. Bristowe in his admirable paper 'On Mitral Regurgitation' in the twenty-eighth volume of the 'British and Foreign Medico-Chirurgical Review,' by the dilatation of the left ventricle, and the consequent disproportion between the size of the ventricle and the length of the chordæ tendineæ, together with the lateral displacement of the papillary muscles, preventing the complete approximation of the flaps of the valve.

I am inclined to regard the enlargement of the heart as an irritative hypertrophy, the stimulus to increased development being the irritant associated with the former attacks of acute rheumatism. The vitality and functional activity of the newly developed tissue being somewhat inferior to that of healthy muscle accounts for the dilatation which existed. In the last attack of acute rheumatism, the irritant acting upon already damaged tissue was sufficient to destroy its vitality, and the result was a granular degeneration of the muscular fibres throughout the organ; in short, a true myocarditis.

The ultimate arrest of cardiac contraction was also probably in part due to the soft adhesions which existed between the two surfaces of the pericardium.

X.—*Acute Suppuration of the Hand and Forearm treated by Acupressure of the Brachial Artery.* By Charles H. Moore. *Read January* 8, 1869.

Miriam McC., aged 24, a married charwoman, was admitted into the Middlesex Hospital, November 8, 1867, under the care of Mr. Moore. She was pale, was troubled with a cough, and was in the last month of pregnancy.

Six days before admission, as she was scrubbing the floor,

a needle entered the pulpy end of the right little finger. Two days afterwards she first felt pain, and on the day before admission an abscess had formed and an incision was made at the back of the hand.

She was not relieved, and on her admission into the hospital the hand and forearm were in a state of highly acute inflammation. The fingers were swollen and bent, the palm was full, tight, and excessively tender; this swelling extended above the wrist into the front of the forearm; the back of the hand also was tumid, and bright redness reached as high as the elbow.

Incisions were made in the hand and forearm, both after admission and on the following day, and temporary relief ensued; but on the 10th the shining tension and the bright redness of the inflamed parts continued, the pain was still severe, more pus was forming in the deep parts of the palm and forearm, and about the wrist; the sleep had been bad, and the cough persisted. It appeared desirable to arrest the inflammation, not only with a view to prevent further injury to the limb by pus which could not be yet reached by incisions, but also in order to save the patient's strength for her approaching confinement. Having read of Mr. Maunder's proposal of tying the principal artery of the thigh to arrest fatal mischief in an inflamed knee-joint, Mr. Moore considered the principle of that operation applicable in the circumstances of the present case, and particularly as it afforded a hope of saving to the system the blood of which it deprived the inflamed part. For this purpose, however, a complete and permanent obliteration of the artery did not seem necessary. Though excessive, such inflammation is usually transient, and its severity might be mitigated by a temporary and even partial obstruction of the vessel. Accordingly Mr. Moore preferred acupressure to ligature of the brachial artery, and he performed that operation at the higher part of the upper arm. A long pin was thrust into the fleshy part of the arm behind the vessels, and guided across them, close beneath the skin. Its direction was then altered, and it was forced out again through the flesh in front of the vessels, the skin being first stretched forward before being finally pierced by the point of the pin. The circulation in the arm was much reduced by this measure; but, as it appeared that the pin did not lie so precisely as to make its whole pressure on the brachial artery, the direction of it was altered by a little additional traction with plaster on the

protruding point. The pressure was thus graduated to allow a very slight arterial beat in the radial artery.

The result was, first, pallor of the inflamed skin and relief of the deep throbbing pain. The pin in the arm, indeed, now gave more pain than the inflammation in the hand. After an opiate, however, she had a very good night. The next day the redness of the hand and much of the tension had disappeared, the skin was shrinking and the fingers wrinkled. Discharge also was coming freely from the previous incisions in the hand and forearm. On the second day the hand and forearm were still more relieved, the swelling was less, the pain had ceased, and there appeared no further sign of matter confined in that part of the limb. But the patient still complained of pain in the upper arm, and on examining it a round thick soft swelling was found in the line of the brachial vessels, extending from the elbow to the pin, where it stopped abruptly. This appeared to be œdematous fluid arrested in its ascent by the pin.

The inflammation of the arm having abated, and the chief inconvenience being now that arising from the pressure on the veins and absorbents, the pin was withdrawn. It had remained in the arm for forty-eight hours. The immediate effect of the removal of the pin was a rosy reddening of the hand and fingers, which showed that, though the circulation had been sufficiently interrupted, the artery had not closed. The hand did not again swell and inflame on the readmission of the blood, and pain did not at once return.

On the 13th a little pus was found oozing from the track of the pin in the upper arm, and, there being renewed pain in the hand, pus was evacuated by enlarging one of the incisions.

On the 16th there was a free discharge from the hand, and so much pus was escaping from the openings made by the pin in the upper arm that it seemed clearly to come from the swelling previously noticed between the elbow and the pin, and supposed to be œdema. Probably, therefore, this pus had ascended from the inflamed forearm.

From the 16th the general health of the patient improved, the track of the pin closed, but the hand did not cease suppurating, and another incision was required. The inflammation, however, did not become severe, as before the performance of acupressure. On November 24, she was confined of a healthy living girl; and in due time, with her hand in a splint, she was able to get up.

Towards the end of December an abscess appeared above the wrist on the ulnar side of the forearm, and it was opened on January 3. This was the last of the numerous and severe suppurations in the case, and the openings successively healed, except one which remained long open near the wrist. The state of the hand eventually was not satisfactory. The fingers were bent, the wrist was distorted, and its movements were painful; the muscles of the forearm were much wasted, and the palmar tendons, fasciæ, and thecæ were firmly bound together, contracted, and fixed. These conditions, however, did not appear to be in any way due to the acupressure, but to the local processes, which certainly may be of more than ordinary severity in a pregnant woman. The temporary abatement of the arterial current reduced in the most marked degree and permanently the acuteness of the inflammation, and thus contributed to some renewal of the strength in time for the approaching confinement.

XI.—*Case of Ruptured Intestine, in which the Bowel was punctured to relieve Distension.* By Thomas Smith. *Read January* 8, 1869.

On the afternoon of June 29, G. H. B., a boy æt. 13, whilst playing at cricket was struck by the ball in the right iliac fossa. He felt faint, but on lying down the sensation passed away, and although unable to continue playing, he did not feel sufficiently hurt to induce him to leave the ground. He remained an hour and a half watching the game, till its conclusion. He then walked home, a distance of more than a mile, experiencing but little inconvenience from the blow. On reaching home an aperient powder was given him. The pain increased in severity, and he began to vomit. His symptoms becoming more alarming, Mr. Shepard was sent for to see him—six hours and a half after the accident. He was found lying on his back with his legs drawn up in a state of collapse, from which he slowly rallied. The seat of the injury was found to be red, puffed, and very tender. It was dull on percussion, the rest of the abdomen being tympanitic.

His symptoms led Mr. Shepard to fear that the bowel had been ruptured. Small doses of morphia were therefore

given, laudanum fomentations applied over the seat of the injury, and food was administered in small quantities and in a fluid form.

June 30.—He had passed rather a disturbed night; had vomited twice; tongue was furred; pulse rapid. He was tormented by thirst, and he suffered severe pain in the belly. Iced soda water and milk were given frequently, and an attempt was made with hydrocyanic acid to stop the sickness, which, later in the day, became incessant. On the third day all his symptoms were aggravated; the abdomen became much distended, and towards evening he suffered from retention of urine, for which a catheter was passed.

On the fourth day, Mr. Shepard requested Mr. Thomas Smith to see the patient with him. The boy at this time was in every respect worse—the vomiting had become fæcal, the abdomen was more distended, and delirium had occurred during the previous night. There had been no action of the bowels since the accident. There could be no doubt that the bowel was ruptured. No change was therefore made in the treatment, the morphia being continued so as to keep the patient under its influence, and nourishment being given in small quantities.

During the fifth and sixth days the boy continued to get worse. The distension of the abdomen became extreme, and caused great pain.

On the seventh day the abdominal distention was so great, and caused such severe suffering, that Mr. Smith punctured the intestines with a fine trocar, through the linea alba—midway between the umbilicus and pubes. The effect of the puncture was immediate, and the relief to the boy's sufferings very great. A large quantity of offensive flatus escaped; the vomiting was less urgent, and he soon afterwards fell asleep. Three hours after the puncture the bowels acted freely, not having before been moved since the accident. The patient quietly sank and died on the eighth day—twenty-eight hours after the bowels had been tapped.

Of the post-mortem examination, Mr. Shepard gives the following account: Extensive peritonitis was found to have taken place. Immediately over the seat of the injury the omentum seemed almost gangrenous. Fæcal matter in some quantity had escaped into the peritoneal cavity from a ragged opening in a coil of the lower end of the small intestine lying contiguous to the caput coli, the opening being large enough to admit the end of one's thumb. On examining the part

where the puncture had been made by the trocar, a clean, round, and patent opening was found in the small intestine, while about ten minims of fluid intestinal contents had escaped, slightly staining the tissues. As, however, there appeared to be no special sign of inflammation, or any undue vascularity, in the neighbourhood of the puncture, it is probable that the fluid did not escape until after death.

We have ventured to bring this case before the notice of the Society, partly on account of the somewhat unusual symptoms that accompanied so severe an injury, and partly because puncture of the bowel was employed as means of promoting euthanasia.

That the boy remained an hour and a half after the accident without showing signs of any serious distress, and that he walked a mile without any great discomfort to himself, one may perhaps attribute to the ruptured bowel being empty at the time of the accident, or at least distended only by flatus. It seems unlikely that grave symptoms would have been so long delayed if any fæcal extravasation had taken place at the time of rupture.

In connection with the employment of puncture for the relief of distension of the bowels, I find recorded* a case where, after the operation of ovariotomy, Dr. Braxton Hicks tapped the intestine through the abdominal walls with a fine trocar, letting off a large quantity of flatus with great relief to the patient, and that the proceeding was subsequently repeated at the patient's own request. Dr. Hicks mentions in his remarks on this case, that he had punctured the bowels in four other cases to relieve flatulent distension with good effect, and that in no instance was any trace of inflammation or extravasation discovered after death.

M. Laforgue of Toulouse† has employed this method of relieving tympanitis in two cases: one patient was moribund at the time the proceeding was adopted; the other patient recovered, the intestines having been punctured six successive times with great advantage and relief to his sufferings.

In the 'Bulletin général de Thérapeutique' for 1867, is an account of a patient admitted into the Hôpital Necker in June last, æt. 28, who was attacked by obstruction of the bowels, accompanied by extreme tympanitis lasting many days. Purgatives, belladonna, electricity, galvanism, were

* 'Lancet,' 1868, vol. i. p. 409.
† 'L'Union médicale,' Oct. 23, 1867.

in vain employed. Retching set in, and as a last resource the small intestines were punctured with a fine trocar, a large quantity of gas escaped, and the same day the bowels acted twice spontaneously. Fifteen days afterwards, and again at a later period, the puncture was repeated, and on each occasion a large quantity of gas escaped, the patient was greatly relieved, and the bowels acted spontaneously. None of the punctures were followed by any inconvenience.

In the case brought forward to-night the relief from pain afforded by the puncture was immediate and well-nigh complete, and the bowels being relieved of gas were enabled to act upon their solid contents.

In opposition to the experience of others, we found after death a small quantity of intestinal fluid extravasated into the peritoneum through a minute but gaping wound in the small intestine—a condition of things which might perhaps have been due to the moribund state of the patient at the time the puncture was made. Or, indeed, the extravasation might have been post mortem, especially since there were no signs of inflammation in the neighbourhood of the puncture.

Though intestinal puncture was employed in Mr. Shepard's case with the view of promoting euthanasia, yet one may believe that it is a measure of wider application. Doubtless there are many cases in which O'Brien's tube suffices to relieve gaseous distension of the lower bowel; yet there are many more instances—of intussusception, of twisting, of local paralysis, of stricture—in which tympanitis is often not only a source of severe suffering to the patient, but a cause of real danger to life, and in which O'Brien's tube is useless. In cases like these, intestinal puncture affords a safe and efficient means of relieving suffering, of facilitating respiration, and, it may be, of saving the patient's life.

XII.—*A Case of Lithotomy, in which the Stone was not discovered, having probably fallen to the ground with the first gush of Urine.* By T. Holmes. *Read January* 23, 1869.

IT is well known that it does occasionally happen, even to the most experienced surgeons, to operate for lithotomy without finding a stone. Many such cases are on record, and many more, it is thought, are unrecorded. Of such

cases, three possible explanations suggest themselves:— 1. That there was no stone in the bladder. The sensation of sounding is often somewhat deceptive; or the operator may have neglected to assure himself of the presence of the stone at the time of the operation, and so the stone, if very small, may have escaped by the urethra during the interval between the sounding and the operation. The well-known case of Mr. Paget, of Leicester, was an instance in which the bladder was cut into fairly, but where there was no stone present.

2. The operator may believe that he has reached the bladder, when he has really only pushed the bladder away from his finger, and worked a space with his finger in front of the displaced bladder. This is the accident which Sir William Fergusson has so well described in his recently published lectures, and of which he gives there an instance in his own practice, where, however, he remedied the effects of the error by the timely use of the scalpel in the deeper parts of the wound.

3. The stone, if very small, may escape with the first gush of water, which usually follows on the introduction and expansion of the forceps; and it may either be found afterwards on the floor or in the wound, or elsewhere, or it may never be discovered. As examples of this accident, I may mention a case which occurred in my own practice at the Hospital for Sick Children. The stone had been felt and heard immediately before the operation. When I put my finger into the bladder, no stone was found. After much search, we discovered a small fragment of it on the patient's dress, but the rest was not found. It had, no doubt, escaped with the urine, and had got broken. The boy was affected with tubercular meningitis. He died of this disease, and after death I ascertained that the wound had been correctly made, and the bladder was empty. Again, one of my colleagues informs me that the same thing occurred to him in private. The stone (a very small one) was found on the floor. In the practice of the late Mr. Keats a similar incident occurred. He operated for stone in a child, but could find none. Shortly after the operation, however (next day, I believe), a small stone presented itself in the track of the wound.

Of this accident, I believe the subjoined case was an example:—

William Bailey, aged 8, was admitted under my care at St. George's Hospital, on October 14, 1868.

He had the usual symptoms of stone. About a month before admission, he was suddenly seized with retention of urine and great pain in the bladder, and had similar symptoms ten days afterwards, which continued more or less till his admission. No blood had ever been seen in the urine.

He had been sounded before admission, and it was thought that a stone was felt; but the child was not under chloroform, and his crying and restlessness prevented the surgeon from being certain of the existence of the stone. The same thing occurred when I sounded him on admission. Accordingly, I decided to sound him again under chloroform, with a view to operating immediately if the stone should be detected. Next day, I put the child under chloroform in the presence of Mr. Prescott Hewett and Mr. Rouse, who assisted me. I immediately felt the stone, and Mr. Hewett and Mr. Rouse also felt it, and afterwards authorised me in saying that they had no doubt whatever of the presence of a stone in the bladder. I performed the usual lateral operation, and without any difficulty whatever. The water gushed out freely when the forceps were introduced, but I did not notice anything particular about this. On introducing my finger into the bladder (which did not require the slightest force), I was surprised to find no stone. The bladder was very carefully and repeatedly explored, and it was made certain that it had really been opened, and that it was empty. The child recovered without a bad symptom, though not so rapidly as usual, probably because the wound had been more than usually handled.

After his recovery, I had him again placed under chloroform and examined very carefully by myself and colleagues. We all satisfied ourselves that there was no stone, and the boy, being perfectly free from symptoms, was discharged on November 25.

XIII.—*Case of Chorea, in conjunction with Rheumatic Fever, treated with Bromide and Iodide of Potassium.* By Edward Headlam Greenhow, M.D. *Read January* 23, 1869.

JULIET ANNA POWELL, aged 14 years, was admitted into the Middlesex Hospital under my care on October 2, 1868.

Previous and Family History.—The patient had had measles, whooping-cough, and scarlet fever. In the year 1864 she had had an attack of rheumatic fever, a second in 1866, and a third in April 1868. Her parents and several brothers and sisters were living and in good health. There was no history either of rheumatism or of cerebral disease in the family.

History of present Illness.—About a fortnight previous to her admission she had complained of stiffness in the neck, and had had rigors followed by pain in the left wrist, and constant choreal movements of the same hand. On September 29 pain and swelling had supervened in other joints, together with sleeplessness, great restlessness, and marked increase of choreal movements.

State on Admission.—Her intelligence was unimpaired and she answered questions pertinently, but her articulation was rapid and somewhat indistinct. There were constant choreal movements of all the limbs, more especially of the arms, and contortions of the face; and the patient rolled her head from side to side of the pillow, and was in a state of such violent and continual jactitation, that she was often in danger of falling out of bed. All these movements were sensibly aggravated when she was disturbed, or was conscious of being watched. Both ankles were red, swollen, and tender on pressure; the right one was perceptibly much hotter than the left, but the patient's continual wriggling movements rendered it impossible to ascertain with accuracy either the local or general temperature. The right hand, over the whole dorsum, and the left wrist and elbow were red, swollen, hot, and painful. The pulse was between 120 and 130, but most difficult to count in consequence of the aggravation of the choreal movements caused by the needful restraint of the patient's hand. The apex of the heart was felt beating in its normal position; the heart-sounds and breath-sounds were normal. The tongue was clean, but when the patient was desired to put it out she protruded and withdrew it so suddenly that there was difficulty in observing its appearance. The pupils were large; the bowels confined. The urine was very acid, specific gravity 1040, and deposited on cooling a large amount of urates. Nothing else abnormal was found in it, either on microscopical or on chemical examination.

Progress of the Case.—The affected joints were cased in cotton-wool, and a dose of calomel and jalap was prescribed for bed-time; to be followed up in the morning, if necessary,

with a draught of salts and senna. She was ordered a liberal diet of strong beef tea and milk. Next day she was found to have been sleepless and in a state of noisy screaming delirium all night. She was rather incoherent, and spoke inarticulately and with difficulty. The choreal movements were so incessant that her tongue could not be seen, nor could her pulse, which remained very quick, be accurately counted. Her bowels had been freely cleared out after the senna draught, and she was now ordered full doses of acetate of potash with fifteen minims of tincture of henbane every four hours.

On the 4th there was no amendment, although she had slept for two hours after midnight. She now passed her urine involuntarily, and was unable to answer questions.

On the 6th she remained much the same; she was almost continually in a state of noisy delirium, and the choreal movements were so excessive that she required constant watching, in order to prevent her from falling out of bed. The rheumatic affection was relieved in the ankles, but still remained in the left wrist and elbow. A night-draught, containing two drachms of tincture of henbane, four minims of diluted hydrocyanic acid and ten minims of spirit of chloroform, was ordered in addition to the alkaline draught she was taking, and the senna purge was ordered to be repeated on the following morning.

On the 7th she was somewhat quieter, and was rational, at intervals, for a short time. She had fallen asleep several times during the night, but had always awoke with loud screams.

On the 8th I found her worse. She had had no sleep, and, when not in a state of active delirium, was incoherent and had a vacant, idiotic expression. She refused all food, and her lips and teeth were covered with sordes. The bowels had not been moved by the senna draught, which was ordered to be repeated as well as the night draught. For the alkaline draught I now substituted ten grains of the bromide and two of the iodide of potassium in an ounce of camphor water to be taken every six hours. Being apprehensive of her sinking, I also ordered two ounces of brandy and four of port wine, to be given her in divided doses during the twenty-four hours.

On the 9th the choreal movements, though still incessant, were less severe, and she was rational and able to answer questions. She had slept without waking for seven hours

after the night draught. There were still rheumatic pains in one wrist, elbow and ankle, and in both knees. To continue the bromide and iodide of potassium and also the night draught.

On the 10th she had again slept well, was much quieter, and could protrude the tongue steadily. Pulse 90.

Two days later she was almost free from chorea, quite free from rheumatism, and had slept well without the night draught. The urine had a specific gravity of 1035, and was non-albuminous, but still loaded with urates. She was now, however, quite prostrate, her pulse was 120, exceedingly feeble, and she passed her evacuations in bed without notice.

From this time the medicines were omitted, and she was supported with a generous diet of milk, strong beef tea, and eggs. She regained her strength slowly and for some time took quinine, but had no return of either chorea or rheumatism, and was finally discharged quite well on November 17. There had at no time during her illness been any cardiac murmur.

Remarks.—This case is brought before the Society on account of its therapeutical interest. It was perhaps the most severe case of chorea which I have ever seen end in recovery, and the improvement began so immediately after the first administration of the bromide of potassium, and progressed so steadily under its use that I cannot help attributing the result to its effects. It is true that stimulants were freely given at the same time, on account of the patient's failing strength, and that the night draught was continued and appeared to induce sleep; but, on the other hand, this latter had wholly failed of its effect until the bromide of potassium was also administered. Small doses of iodide of potassium were added, on account of the rheumatism, which I now regret, lest they should be supposed to share what I am strongly inclined to believe was, with regard to the chorea, the exclusive efficiency of the bromide.

It may, of course, be objected to my view of the case, that the amendment was already impending before the bromide of potassium was administered, and that the rapid recovery of the patient was not in reality attributable to the employment of this remedy. Such an objection can only be met by further proofs of its good effects, and it is in the hope of obtaining the co-operation of independent observers in my investigation of the subject that I am induced to place upon record this single case.

XIV.—*Chorea complicating Pregnancy, treated by Bromide of Ammonium and Arsenite of Potash, later by the Bromide of Ammonium only.* By J. Hall Davis, M.D. *Read January* 23, 1869.

OCTOBER 7, 1868, I was consulted in the case of a married lady, aged 20, three months advanced in her first pregnancy, and who had been attacked by chorea six weeks previously. Her complexion fair, slightly florid, her conformation slender, stature medium. From a child she has been of an excitable hysterical temperament. Her mother states that her daughter has never had any affection of this kind before, nor ever had rheumatism, and that she has not been exposed to any fright, or other mental disturbance.

She is subject to cold feet, the bowels have been habitually costive, but latterly she has sometimes had loose stools; urine normal. There has been much of the usual sickness of pregnancy up to this date. Appetite good, especially for meat; tongue not quite clean, flabby and indented at sides; pulse 130, regular, soft, not full; temperature normal.

A smooth systolic murmur heard over heart's base, not at apex. Respiration natural; percussion note over chest back and front good.

The choreic movements first attacked the left arm, next the right arm, gradually spreading over the rest of the body. The eyes are rolled considerably, and the patient grinds her teeth frequently, puts out and withdraws her tongue hurriedly, sits very restlessly, at times throwing herself, as she did during my visit, almost full length upon the sofa, now in one direction, now in the opposite. She requires two persons to dress her. She is quiet when asleep, which she does tolerably, awaking, however, two or three times during the night. There has been no delirium. Feeling tired at night, she goes to bed by her own wish at nine, breakfasting next morning in bed, and not rising till eleven.

The previous treatment had consisted of valerianate of zinc, quinine, iron, henbane, camphor, with cold sponging of the body, but had not benefited her.

I prescribed bromide of ammonium in 5 grain doses with arsenical solution five minims in a vehicle every four hours. At the end of a week I was informed that the movements had diminished. Treatment continued.

Oct. 23.—Pulse 104. Patient can now sit quiet. The movements are confined to the hands, the grinding of the teeth no longer present. She now rises from bed at half-past eight to breakfast. She has a slight catarrh affecting the mucous membrane of the nose and frontal sinuses, also the conjunctiva, attended by slight ulceration of the mouth. The bromide of ammonium and arsenical solution continued. A borax lotion for the mouth.

Nov. 3.—Pulse 94. Movements further lessened, ulceration of mouth has disappeared. The catarrh nearly gone. Sleep good. The pregnancy has reached the fourth month. The bromide of ammonium was now continued without the arsenic, with the addition of a drachm of tincture of calumba to each dose thrice daily.

Dec. 7.—I was hurriedly called to the patient, as her ordinary medical attendant was ill in bed. I found slight uterine hæmorrhage and labour pains, which had ensued upon over-exertion. As the ovum was pressing through the os uteri, there was no preventing a miscarriage, which took place later in the day and was fully completed by the spontaneous expulsion of the placenta, membranes, and coagula entire, and the uterus contracted well. The fœtus exhibited some slight signs of life for a few seconds; its development corresponded with the calculation that the patient had completed five months of her pregnancy. There was no disease of the placenta, and I am disposed to believe, that with due care on the part of the patient against over-exertion, in regard to which she had been fully cautioned, the pregnancy would have advanced to its natural period.

There had been scarcely a trace of choreic movements since my visit November 3, and before labour set in those movements had entirely ceased for several days. I may add that as the more violent actions of the muscles left her, the bellows sound at the heart's base was no longer to be heard.

18.—The patient is quite convalescent from her confinement, and has exhibited no return of choreic movements. The medicine was discontinued on the accession of labour and was not afterwards resumed.

Although arsenic was, during the first month of treatment, given in combination with bromide of ammonium, I attribute the gradual subsidence of the convulsive disease in this case to the sedative action of the bromide upon the nervous system, as also in another case recently under my joint care with Dr. Thompson at the Middlesex Hospital, oc-

curring in a patient of the same age, and also in pregnancy, but in which instance there was for a time violent delirium, which was treated by chloroform.

I may add, that these are the only cases in which I have employed the above remedies. I had previously rarely failed with steel and purgatives, but these had entirely failed in the case which I have above given.

In my next case of chorea I shall commence the treatment with the bromide of ammonium only, to avoid all chance of fallacy from combining arsenic, which I know has also a reputation for curing chorea.

XV.—*Removal of a Solid Mass, probably a growth, from the Tympanum, by Incision of the Membrana Tympani.*

By James Hinton. *Read January* 23, 1869.

Mrs. H. S., æt. 44, delicate but healthy, consulted me on December 12 last.

During a voyage to Australia sixteen years ago, she caught a violent cold, which caused for the time a loss of hearing, taste, and smell. The taste and smell and the hearing of the right ear shortly returned, but the left ear, in which there had been severe pain, has ever since continued deaf. Since the present history is confined to the right ear, I may simply say of the left that it presented on examination the appearance of a previous perforation of the membrane, with a slight accumulation of mucus within the tympanum. The hearing was greatly impaired, but improved somewhat under treatment.

The right ear had continued fairly good until January last. It was then, without remembered cause, attacked by severe pain, which, after a few days, was followed by discharge, accompanied at first with a little bleeding. Since this there has been no acute pain, but there have remained more or less constant uneasiness with deafness, a beating and humming in the ear, and confusion in the head. The discharge also has continued, and there has been tenderness behind the ear. Lately the glands behind the angle of the jaw have become swollen.

On examination, the meatus was seen red and swollen, especially its posterior wall, near the membrana tympani.

The membrane was of a dull gray hue, with a patch of vascularity near the centre. It was swollen so that the malleus could not be distinguished, and posteriorly was slightly prominent. At the anterior part was a darker and thinner portion resembling the scar of a former perforation.

A repeater watch was heard only when held close to the ear, but a tuning fork placed on the head was well heard, and louder on the right (the worse) side, showing that the deafness was due to obstruction within the tympanum. The Eustachian tube was closed, but air was passed through it during the act of swallowing, raising the hearing to 4 inches for the ordinary beat of the watch.

The upper part of the fauces was washed daily by a solution of soda syringed through the nostrils. A small blister was applied, and a warm lotion of liq. plumbi ♏xx., olei olivæ ʒj., dropped into the ear night and morning.

Some relief was obtained by these means during the next three days; but, judging from the history and the appearance of the membrane that the symptoms were chiefly due to an excess of secretion contained within the tympanum, I made, on the 15th, an incision about 2 lines in length through the posterior part of the membrana tympani.

Contrary to my expectation, no fluid followed the incision, nor did any escape from the wound when air was passed forcibly through the Eustachian tube; but on examining the membrane after repeating this procedure a few times, a solid mass was seen protruding through the wound. This was afterwards removed by further inflation of the tympanum, followed by syringing, and proved to be a small kidney-shaped mass of bright red colour, about 3 lines in length by 2 in breadth. It was of firm consistence, slipping away with a dense elastic feeling when seized by the forceps. Under the microscope it presented only a mass of small cells, with here and there an appearance of slight fibrillation.

From this time all the symptoms rapidly abated. There was no more discharge nor tinnitus. The hearing rose at once to 12 inches, and in a few days to 24. In a week the incision was healed; the redness had almost entirely disappeared, and the membrane had partly recovered its transparency. The patient returned to the country entirely, though probably not yet quite permanently, relieved.

I am not aware of any case corresponding to this; and the nature of the body thus exciting irritation by its presence in the tympanum appears to me not quite certain. My own

belief is, that it was a growth from the tympanic mucous membrane, corresponding very closely with those which, when found in the meatus, are termed polypi. In aspect and structure it was very similar to some of these; and I have—at least, in one case—found, on dissection, small red growths springing from the tympanic wall, and especially from the inner surface of the membrana tympani, without perforation and without any considerable increase of secretion. The spontaneous detachment of such a growth within the tympanum may reasonably be assumed, since it is occasionally witnessed in growths springing from the meatus; or the sudden inflation of the tympanum with air may have contributed to this result.

I have, however, ventured to bring this case before the Society, less on account of its singularity than because it seems to afford a good instance of the value of a very simple and safe, but often very urgently called-for procedure—the incision of the membrana tympani. It is needless here to refer to the circumstances which threw discredit on this operation, and caused it to fall into a not unnatural disfavour—chief among which ranks the difficulty of maintaining an orifice permanently open. But this difficulty becomes an advantage in cases in which, as in this instance, or in the large number of fluid accumulations within the tympanum, the incision is made with the object of removing morbid materials which can in no other way be prevented from exerting an injurious influence.*

XVI.—*A Case of Acute Rheumatism in an Epileptic, with obscuration of the first sound of the Heart.* By Thomas Buzzard, M.D. *Read February* 12, 1869.

Summary.—An epileptic girl gets acute rheumatism (first attack), affecting all the principal joints, but not very severely. From the fourth to the twelfth day of her illness the pulse generally varies between 120 and 160, and the first sound of the heart is nearly inaudible. The temperature during this time, however, never exceeds 102·0° F., and averages only 100·9° F. No friction sounds are heard; nor is there any increased extent of cardiac dullness. A very faint

* June 1869.—Subsequent history: The membrane was reincised and mucus evacuated about three months after the first incision. There has since been no return of the symptoms.

systolic mitral murmur is perceived (?). During convalescence the heart sounds are absolutely normal. Duration of attack, thirteen days.

Anne F., aged 16, a patient under my care in the National Hospital for the Paralysed and Epileptic, was attacked with symptoms of acute rheumatism on November 7, 1868. She had been admitted on August 18, for epileptic fits, which had occurred irregularly for three years, sometimes to the number of five or six daily, with occasionally an intermission of a fortnight. The intermissions latterly had been becoming less frequent and of shorter duration. Each fit was preceded by a cramp in the left hand, which then got numbed, consciousness was lost, there was foaming at the mouth and convulsion, but she did not bite her tongue.

On admission the cardiac sounds were normal. She had imperfect use of the left hand. Intelligence was particularly good.

History.—Father died of consumption. Mother living, healthy. No history of neurosis in the family. Three or four years ago she got a blow with a cane over the left wrist, which gave her much pain at the time, and for some days afterwards. Shortly after this (how long she does not remember), she began to get 'queer feelings' in the left hand, passing up the arm. The hand would fall powerless, and things drop from it. This went on occasionally for perhaps a year, and then, on one day, she lost consciousness. Menstruation had been quite regular. It commenced one year before admission. She had never had acute rheumatism.

Progress after Admission.—Two days after admission, being then under no treatment, she had a fit. This was on August 20. She had another on the 22nd and 23rd. On the 25th, a blister, one inch wide, was made by painting blistering fluid around the left forearm, a little above the wrist. She had no fit till September 7, when she had one. On September 14, another blister was made above the last. This procured no further immunity, however, for between this time and October 1 she had twenty fits.

On October 5 the blister was repeated, this time being applied around the left wrist. She had one fit next day and another on the 8th; then none till November 6. During this period of exemption she had occasional 'stopping of the blood in her hand,' not followed by unconsciousness.

On Nov, 7, she had pain in the left knee, and this soon shifted to her feet; these were swollen and painful on the 10th,

when I saw her and ordered her to bed, directing the linimentum belladonnæ to be applied, covered with cotton wool.

Nov. 11.—Her pulse was very small, and numbered nearly 160 in the minute. She had passed a very bad night from pain in the feet and knees, which were swollen and red. Her temperature was 101·2° F. There was some little cough, but no distress; and she had eaten meat for dinner. On listening over the cardiac region, I found the first sound of the heart scarcely perceptible; the second, possibly from contrast, appeared to be accentuated. She was ordered 5 minims of tincture of digitalis + 3 minims of liquor morphiæ every four hours, a continuation of the belladonna and cotton wool application to the joints, and a sinapism to the chest.

12.—She had slept better. Temperature 100° F.; pulse 140; there was no perceptible bruit, but the first sound was still scarcely audible. Some pain was complained of in the præcordial region, and the wrists were now swollen and painful. The treatment was continued.

13.—Temperature 98·8° F.; pulse 152; respiration was natural; there was a little cough. The back, knees, ankles, and wrists were all painful, but not severely affected. Tongue was thickly coated with a wet-blanket-like fur. There was copious acid perspiration. The first heart sounds remained as before; there was a doubtful very faint systolic bruit at the apex.

14.—Temperature 101·4° F.; pulse 140. She had passed a bad night, and pain was nearly universal; but there was not that complete helplessness so often seen in cases of acute rheumatism. A careful examination showed that there was no increase in the area of cardiac dullness; and I could not detect any friction sound or bruit. She was now ordered 5 minims of liquor morphiæ with 2 grains of quinine every four hours, and a tablespoonful of brandy every four hours.

15.—Temperature 101·8° F.; pulse 130. She had slept well. There was some sickness, but otherwise the symptoms continued much as before. To continue the treatment, the drugs being given in effervescence with citrate of potash.

16.—Temperature 102° F.; pulse 112. Her tongue was cleaner. She had passed a good night, and there was more power of movement in the joints. Sickness had ceased. The first sound of the heart appeared to me more distinct, and I thought I could detect a slight bruit. Continue the treatment.

17.—Pulse 106; temperature not taken, as her arms were very painful.

18.—Pulse 120; heart sounds nearly natural. She felt much better.

Next day her tongue was clean. She ate some fish. The limbs were moved freely. Nothing abnormal was to be heard in the cardiac region. On the following day she had a chop, and on the 24th she got up.

The morphia was continued till the 23rd, and then quinine alone was given. She did not at any time take more than 4 oz. of brandy in the twenty-four hours.

On Dec. 6, her fits, which had been suspended throughout the rheumatic attack, were resumed with great severity.

Remarks.—In this case the state of the pulse, very small and weak, and numbering nearly 160 beats in the minute, together with the almost complete inaudibility of the first heart-sound, gave rise at first to grave apprehensions, and the state of the heart was watched with great care. My colleague, Dr. Reynolds, who kindly auscultated the patient on November 13, agreed with me in thinking the symptoms such as to cause anxiety. Soon, however, the complete absence of distress and the very moderate temperature which the thermometer indicated, served to reassure me, although the pulse continued to be extremely rapid, and the heart sounds influenced in the manner described.

It would be possible to refer the cause of the phenomena to the occurrence of commencing inflammation, which was cut short by the treatment. I incline rather, however, to believe that it was essentially neurotic in character; that the heart was scarcely heard to contract because it contracted very imperfectly, and that the large number of pulsations in the minute were necessitated in order to compensate for this incompleteness. The morphia, which was administered regularly for ten days, seemed to have a highly beneficial effect. Under its influence the pulse gradually came down, rest was procured, and the sounds of the heart resumed their normal character. With the exception of a sinapism, which was applied to the chest when the condition of the heart was first noticed, no local treatment whatever was directed to this region.

I would especially refer here to the singular value of the thermometer as shown in this case. The observation of the very moderate temperature soon made it certain that the anomalous symptoms did not depend upon an inflammatory process, and the prognosis became favourable accordingly. The sequel of the case confirmed this opinion. The suspen-

sion of the epileptic seizures during the attack is not uncommon. It occurred also in another epileptic patient, who suffered an attack of acute rheumatism in the hospital about a twelvemonth ago, and it has, I believe, been not unfrequently noted in other cases of similar character.

XVII.—*Cases of Syphilitic Rheumatism.* By Alfred B. Duffin. *Read February* 12, 1869.

THE following cases are intended to illustrate the value of temperature tables in the diagnosis of obscure forms of syphilitic rheumatism. The first of them occurred in the practice of Dr. Garrod, to whom I am indebted for the notes; the second is my own.

Dr. Garrod's patient, W. P., a usually healthy wheelwright, of 36 years of age, entered King's College Hospital on January 29, 1868, complaining of general pains in his limbs and an ill-defined sense of languor and debility. The spot where he experienced the greatest distress lay between the elbow and wrist joints in both arms. This had been the starting-point of his illness, which dated back about three weeks. No history of previous rheumatism, of exposure to cold, or other definite cause could be elicited. With the exception of slight febrile signs all the functions seemed to be normally performed. The temperature, however, was noted at 101$\frac{3}{5}$° F., and the pulse at 104. He was ordered a mixture containing five grains of quinine and half a drachm of bicarbonate of potash three times daily, the earliest theory formed of his malady pointing to a mild form of acute rheumatism. It was, however, soon observed that his temperature was liable to morning and evening oscillations extending over two, three, four, and even five degrees Farenheit, the evening limit being always the highest and, on the whole, the most steady. Five days after admission the skin, which had previously been moderately moist, began to exhibit regular fits of nocturnal sweating. This induced Dr. Garrod to administer the quinine freely, and for four days the man took 30 grains daily. On February 12, finding that the diurnal oscillations were not in any way modified by the quinine, half-drachm doses of the sulphite of soda were substituted for it. This seemed to check the sweatings, and the pains in the limbs mended slightly, but the oscillation in

temperature and pulse persisted; and with a dry skin the averages attained were rather in excess of those previously noted, the extremes of bodily heat still varying three to four degrees in the twenty-four hours.

A careful search for pulmonary tubercle was then instituted, and although the result was negative, cod liver oil in half-ounce doses was resorted to. No material change ensued. Just before he began to take the oil, he had a rigor, followed by tenderness and swelling of the right ankle. This joint continued to distress him for upwards of a month. During this interval the arms gradually got better without any obvious cause. As, however, the ankle improved, the wrists, elbows, and shoulders became implicated both with tenderness and effusion. Simultaneously with this, on March 18, fifty days after admission, sores appeared on his head, and soon afterwards on his legs. These were recognised as syphilitic, and the patient, when taxed, confessed to having suffered from primary symptoms four years previously. The natural progress of these sores was watched for about ten days, and on March 30 the patient was ordered 30 grains of iodide of potassium daily, divided into three doses. In two days his temperature steadied decidedly, and on the third day it fell to 98$\frac{1}{5}$° F., and all nocturnal exacerbations stopped. The pains in his various joints rapidly subsided and the sores began to heal. In the next fortnight he gained 20 lbs. in weight, and then he left the hospital.

The second patient, J. D., was twenty-four years of age, a compositor, and was admitted into King's College Hospital November 24, 1868. He complained of pains and slight tenderness in both his shoulders, both hips, and in his right knee, the latter joint being somewhat swollen. He ascribed his illness to catching cold whilst leaving a theatre ten days previously, and stated that he had shivered the next morning. He also had general catarrhal signs. His history pointed to a syphilitic infection eight years previously, followed by a scaly brown rash; but for nearly seven years his health had remained perfect. He soon exhibited similar oscillations of temperature to those of Dr. Garrod's patient—variations of three, four, and five degrees between the morning and evening observations. The exacerbations were nocturnal, and similarly associated with night sweatings; so much so that I repeatedly examined his chest for evidences

of phthisis. Finding none, and bearing Dr. Garrod's case in mind, I, on the tenth day after his admission, determined to test the hypothesis of syphilitic rheumatism. Iodide of potassium was given freely. In forty-eight hours the temperature steadied down to 97° F., and all the joints rapidly improved. Eight days later he was discharged cured.

XVIII.—*Cases of Hæmoptysis, followed by inflammatory changes in the Lungs.* By Christian Bäumler, M.D. *Read February* 12, 1869.

HÆMOPTYSIS, apart from those cases in which it is caused by disease of the heart or great vessels, has ever since Laennec been almost exclusively considered in the light of a symptom, in many instances indeed the first one, indicating the existence of tubercular disease of the lungs. Some years ago, however, Professor Niemeyer* rehabilitated the view which had been generally held before Laennec, by maintaining that in many cases hæmoptysis, so far from being a symptom of already existing phthisical disease, was rather its cause, part of the blood which is not expectorated and which has coagulated in the smaller bronchi and air-vesicles acting by its decomposition as an irritant, and causing inflammation of the lung-tissue. This in its turn may become the starting-point for those chronic pneumonic changes which constitute the chief part of mischief in phthisical lungs.

The following cases would seem to support Professor Niemeyer's theory.

Case I.

Summary.—Repeated profuse hæmoptysis in a girl of 19, who had for the last five months suffered from cough. No lung disease discoverable when first seen. A few days after last hæmoptysis, symptoms of extensive bronchitis, infiltration of lung-tissue and effusion, accompanied by high pyrexia. Complete recovery in about two months, slight retraction of upper part of left lung, however, remaining.

E. S., aged 19, a domestic servant, came under my care as

* F. v. Niemeyer's 'Klinische Vorträge über die Lungenschwindsucht, mitgetheilt von Dr. Ott.' Berlin 1867, p. 48–65.

out-patient at the Victoria Park Hospital on November 7, 1868. She is born from a healthy family, in which, as far as she knows, phthisis has never occurred; her grandparents lived to old age, and her father, now 54, and mother, who is now 49, as well as five sisters and one brother, are quite healthy. As a child she had whooping-cough, afterwards, when about $3\frac{1}{2}$ years old, scarlatina and measles. Otherwise she enjoyed, with the exception of occasional attacks of sore throat, always very good health. She has never suffered from epistaxis. The catamenia first appeared when she was 16, and have since been quite regular.

In June last, after having been out on a cold day rather lightly dressed, she began to cough and expectorate, and from the last week of June for about three weeks she brought up blood, mostly of a bright colour, sometimes fluid and sometimes clotted. She then became very weak, pale, and short breathed, felt sometimes a slight shivering, but was not obliged to keep her bed. Her appetite failed and cough and expectoration continued. In the middle of October one morning in rising she brought up a large quantity (according to her account about half a pint) of bright blood, and a small quantity every day since.

Present state on Nov. 7.—The patient is tall, well built, and well nourished, but very pale. Chest rather narrow with large antero-posterior diameter. With the exception of a sonorous rhonchus below the right clavicle, nothing whatever abnormal can be found on examination of the chest. Pulse 128; temperature somewhat elevated, the mercury in about five minutes rising to 101·5° F. She was ordered to leave her service, to lie in bed, and to take a mixture containing nitric acid and tinct. ferr. perchlor. three times a day, and morph. hydrochlor. gr. $\frac{1}{6}$ at night.

Notwithstanding this advice she continued to work, and on the 9th she again brought up about half a pint of blood. She came to the hospital again on the following day, quite prostrate and still more blanched. Sibilous râles were now heard here and there on both sides of the chest, but most markedly below the left clavicle. The area of the heart's dullness appeared to be somewhat enlarged to the left in its upper part, beginning already on the second costal cartilage. There was now intense pyrexia, the mercury in a few minutes rising to 104° F. Dr. Stephen Ward, whom I called to see the patient, at once admitted her into the hospital, and it is owing to the courtesy of Dr. Ward, who left the patient

under my care, that I was enabled to observe the case carefully, and to bring it before the Society.

She passed a bad night, was exceedingly feeble, but did not raise any more blood, the scanty expectoration consisting entirely of a viscid transparent mucus. Cough neither violent nor frequent. Pulse rather full. Ordered Milk diet; tinct. digitalis ♏x., quin. sulph. gr. j., acid. sulph. dil. ♏v., inf. quassiæ ℥j. every four hours.

On the morning of Nov. 11, Mr. Power, the resident medical officer, to whom I am indebted for part of the notes, and for many thermometrical observations, found the temperature to be—

At 11 A.M. 105·5° F.; pulse 140; respir. 36.
At 4 P.M. 105° F.; „ 128; „ —

Nov. 12.—Morning, temp. 104° F.; pulse 120; respir. 32.
Evening, „ 104° F.; „ 128; „ 30.

There was now sibilus all over both lungs, the dullness at the left margin of the heart a little more marked, and there was marked dullness in the region of the spleen. Indeed this was so well marked, and in form so much resembling that of an enlarged spleen, that for several days it was very doubtful whether we had not to deal with a disease of the typhoid class, or, more probably, with acute tuberculosis. Head symptoms, except headache, were absent. The tongue was dry and coated in the middle. The absence of any rash on the skin, however, and the course which the pyrexia took cleared the case of the former possibility in a few days.

13.—Passed a fair night. Was sick last evening. Tongue continues dry.

Morning, temp. 103° F.; pulse 112; respir. 26.
Evening, „ 102° F.; „ 116; „ 32.

Ordered to take the mixture every six hours only.

14.—Morning, temp. 102° F.; pulse 100; respir. 26.

Urine does not contain any albumen; sp. gr. = 1020.

16.—The tinct. digit. was omitted; to continue the mist. quin. three times a day.

The febrile symptoms remained at about the same height until Nov. 19, when the temperature fell to 100·5° F. in the morning. The evening temperature was now always about 1 to 2° F. higher than the morning temperature. The pulse varied after this date between 100 and 124. The respiration, however, was strikingly at variance with temperature and pulse in now rising whilst they were falling. Thus, on Nov. 24, the

pulse was 96 and the temperature 100° F., the respiration 50; and in the evening the numbers were—116, 100·8° F., and 54.

The physical signs had by the end of the first week altered in so far, as not only the dullness along the left margin of the heart persisted, but slight dullness also became perceptible above as well as below the left clavicle, and in the left suprascapular region. The respiratory murmur, as far as it was not covered by sibilus, was of a less distinct vesicular character here than on the right side; but only on one evening I heard some moist crackling râles in the left third intercostal space. On several occasions she complained of pains in the left side, for which mustard poultices were applied; and also of pain at the left apex, especially on percussion. The sputa were frothy and viscid with a good deal of black pigment, but altogether very scanty.

On Nov. 23, a diminution of the dullness below the left clavicle was noticed, but the enlargement of the area of cardiac dullness upwards and to the left remained the same, and at the back the dullness was still very perceptible. There was also slight dullness at the base of the left lung, but the line of demarcation stood higher in the side than at the back, thus leading to the inference that it might be due to an enlargement of the spleen, which, however, could never be felt below the ribs. After having recently met with a similar outline of the dullness in several cases where effusion into the pleural cavity was undoubtedly its cause, I am inclined to believe that this dullness in the left side was here also due to fluid effusion in the pleural cavity. Pleuritic friction sound was never heard at any time. The sibilous rhonchus was much diminished, but still present in different places. The breathing at the left apex somewhat more feeble than at the right one, but vesicular in character.

On November 28 her general state had already markedly improved, yet she was still exceedingly weak. She took her food better (mutton chop since November 18) and looked less anæmic, but some emaciation became now more perceptible. The tongue quite clean. Constipation rendered sometimes an enema necessary. There was now very little cough and no expectoration whatever. The signs on percussion the same as on the 23rd. There was now no sibilant nor any other râle to be heard anywhere, and the breathing at the left apex vesicular. The heart's sounds had always been quite normal, but the second sound over the pulmonary

artery appeared now louder and also more accentuated than on admission and some time afterwards.

On December 1 the following note was taken: Cough very trifling, and there is now a little gray expectoration again; puriform sputa did not appear at any time. There is still slight dullness at the left apex, above the clavicle as well as below, and more marked behind than in front, but decidedly less than a week ago. The dullness in the left side and at the base of the left lung behind persists. The expiratory murmur appears somewhat prolonged below the right as well as the left clavicle.

On December 5 she had more cough and expectoration, and last night's rest was disturbed by pain in the upper part of the left side of the chest. There is now some sibilant râle again below the right clavicle. There had also been a rise of temperature again on the evenings of December 3 and 4 to 103° F. and 102° F. respectively, but after Dec. 10 it fell below 100° F. From that day the respiration showed also a decrease to and below 32, the pulse varying between 80 and 104. After December 15 the temperature did not exceed the normal range. About this time she began to sit up for some hours every day, and since the beginning of this year she has been up all day long. The anæmia disappears more and more, and she is rapidly gaining strength and weight, the latter at a very good rate. On December 17 she weighed 7 stone 9 lbs., to which on December 31 she had gained 11 lbs., on January 14 6 lbs., and on January 28, 2 lbs. more—19 lbs. altogether, in about six weeks. Her hair has been coming out very much ever since the second week of her illness.

Since November 27 tinct. ferr. perchlor. ♏ x. have been added to the mist. quin., and since December 8, she has been taking ol. morrhuæ ʒij. twice daily.

On January 22 I again made a careful examination, of which the following is the result:—

3 P.M. temp. 99·2° F.; pulse 92; respir. 24.

The cardiac dullness still increased, and perceptible already in the first intercostal space. I must here mention that on the first occasion when the patient came under my care as out-patient, no note was taken of this increased dullness, and I do not recollect whether I then noticed it or not. It may therefore possibly have existed before, and may even partly be due to the configuration of the thorax. But, to a

certain extent, this dullness is probably due to consolidation and retraction of the thin anterior part of the left lung.

Beyond the middle of the first intercostal space there is now no difference on percussion between both sides, nor is there any at the back. There is just a trace of difference above the clavicles, a slight diminution of resonance at the left apex. In the left side the dullness measures $2\frac{1}{2}$ inches longitudinally. The respiratory murmur is a little louder and coarser below the left clavicle than below the right one. The heart's sounds normal, almost of equal intensity, and the second sound over the pulmonary artery less accentuated than on December 5 and afterwards. There is now no cough whatever. The catamenia, which did not appear once during her illness, have appeared again in January.

In the first days of February she did not feel so well, and on the 1st she brought up some bright blood again; there was some uneasiness in the throat, the mucous membrane of which appeared rather red and somewhat relaxed, but no constitutional disturbance followed, and the physical signs in the chest were the same on February 4 as on January 22. She may, therefore, be considered fairly convalescent, and is only kept in the hospital to confirm her recovery.

Postscript.—She left the hospital in the beginning of March and went to Hastings. She was seen again at the hospital in the beginning of May, when she stated she had been perfectly well, and quite free from cough since leaving the hospital. The anæmia had quite disappeared, and she looked strong and healthy. Except enlargement of the area of the heart's dullness, no abnormal physical sign whatever could be detected in the chest.

Case II.

The following very similar case, in which, however, the inflammatory process appearing after the hæmoptysis was much less intense, had come under my observation four years ago, when I was resident medical officer at the German Hospital. (See Chart, p. 94.)

Summary.—Sudden hæmoptysis, not preceded by cough or other chest symptoms. Symptoms of bronchitis and pneumonia three days later. Pyrexia lasting a week. Recovery.

H. T., aged 22, a baker, was admitted into the German

Hospital under the care of Dr. Hermann Weber, on May 8, 1864. The mother and two of his brothers and sisters had died of consumption; his father is well. He has always enjoyed good health, never suffered from any chest affection, and particularly mentions that he has had no cough lately. On May 7, in stooping down, he suddenly began to spit up blood in considerable quantity, and cough and bloody expectoration have ever since continued.

On admission he was pale, but presented well developed muscles. Chest rather narrow, on percussion everywhere quite normal. The respiratory murmur vesicular, but rather feeble all over the chest, and accompanied by sibilant râles, especially at the expiration, and more so at the left apex than at the right one. Area of cardiac dullness small; heart's sounds normal, the second one not particularly accentuated over the pulmonary artery. The sputa were viscid and mixed with dark clotted blood, but they did not present the form of casts of the bronchial tubes. In the evening the temperature seemed to be a little above the normal, but was not taken with the thermometer; pulse 84. He was ordered milk and broth diet, and a mixture containing morphia and acid. sulph. dil., morph. gr. $\frac{1}{6}$ at night extra.

May 9.—Morning, pulse 88; temp. 99·14° F.*
Evening, „ 56.

Has raised some more blood this evening.

10.—Morning, pulse 64; respir. —; temp. 100·95° F.
Evening, „ 68; „ 38; „ 102·74° F.

Perspired a good deal during the afternoon. Pulv. Dov. gr. v. instead of morph.

11.—About 4 A.M. he suddenly brought up again a large quantity of blood, although there is not much cough. Physical signs the same as on admission, except that the sibilant râles are much more extensively heard. Some diarrhœa during the day.

Morning, pulse 76; respir. —; temp. 100·4° F.
Evening, „ 76; „ 32; „ 101·48° F.

Ordered M. cretæ. c. opio et tinct. catechu; morph. $\frac{1}{6}$ gr. at night.

12.—Morning, pulse 80; respir. 26; temp. 103·64° F.

Has not raised any more blood, the sputa only containing

* The observations were made with a thermometer divided in centigrades, and the numbers were afterwards translated into those of the Fahrenheit scale.

some old discoloured clots. Bowels were open five or six times during the night. On percussion the resonance is found somewhat diminished, and of higher pitch between the right clavicle and the second rib. The respiratory murmur very feeble, but of no marked character. Tongue clean. Complains of headache and giddiness.

Evening, pulse 80; respir. 32; temp. 103·28° F.

Bowels have acted once during the day. Headache continues. Perspired in the afternoon. Ordered Pulv. Dov. gr. ijss. at night.

13.—Morning, pulse 60; respir. 20; temp. 102·02° F.

Had a better night, but was four times disturbed by diarrhœa. Sputa viscid and rusty. Slight dullness perceptible at right apex in front and at the back. Sibilant râles all over. Ordered Acid. gallic. gr. v. three times a day.

Evening, pulse 64; respir. 24; temp. 103·1° F.
14.—Morning, „ 64; „ 22; „ 101·48° F.

The diarrhœa has ceased. Very little cough; sputa very much resembling those of common pneumonia.

Evening, pulse 68; respir. —; temp. 102·2° F.
15.—Morning, „ 52; „ 22; „ 100·4° F.

Perspires a good deal. More appetite. The sibilant râles much more marked over the right apex than over the other parts of the chest. Sputa partly purulent and partly viscid and rusty.

Evening, pulse 60; respir. 24; temp. 100·76° F.
16.—Morning, „ 56; „ 22; „ 100·04° F.

Sputa more puriform.

Evening, pulse 64; respir. 24; temp. 99·68° F.
17.—Morning, „ 48; „ 22; „ 98·6° F.
Evening, „ —; „ —; „ 98·8° F.
18.—Morning, „ 68; „ —; „ 98·42° F.

19.—The rhonchus sibilans has quite disappeared. He was made an out-patient on May 21, when no abnormal sounds could be heard on his chest. Unfortunately, no note was taken at that time of the results of percussion at the right apex.

This patient subsequently, in September 1864, contracted syphilis, and has been repeatedly under my care with secondary symptoms. The last time I saw him was about a year ago; he was then not in good health, and had also chest symptoms, but I have no notes on the physical signs he then presented.

Case III.

Summary.—Pneumonia especially of the lower lobe of the left lung, following hæmoptysis, leading to a rather rapid phthisis, ending fatally seven months after the first hæmoptysis.

T. B., aged 22, a German clerk in the City, had for the first time slight hæmoptysis on May 11, 1868, after running very hard to catch the train at London Bridge Station. On May 18, in going out of the office in the evening, he again began to bring up fluid blood, and in a short time two handkerchiefs were saturated with it. On the 19th I first saw him. According to his account there is no consumption in his family, and he has never been ill in his life, except with scarlatina when four years old. When younger he sometimes had epistaxis. Six weeks ago, when he came over to England, he got rather wet on the steamer, and since then he has had a roughness in the throat, and a little cough with slimy expectoration every morning. But otherwise he felt quite well and strong.

He was a very tall, tolerably well nourished young man, with a good colour in his face, the chest particularly well formed, and on percussion not presenting anything abnormal. The respiratory murmur a little rough in the left suprascapular region, and now and then accompanied by a sonorous rhonchus. The mucous membrane of the pharynx somewhat relaxed, tonsils not enlarged. No pyrexia.

When I saw him again on the 23rd, he reported that he had not raised any more blood, but that he continued to have a little cough in the morning, and that ever since the 19th he had felt towards evening a little shivering and headache, but less so on the last two days. His pulse was now 84, the temperature above 101° F. There was now some dullness in the region of the spleen. He also complained of a sharp pain in the middle of the back to the left of the spine, but nothing abnormal could be detected there nor anywhere else.

On May 25 the cough had somewhat increased, and there was some white slimy expectoration, the area of dullness in the region of the spleen larger. At the place on the back where he had complained of pain on the 23rd, very fine crepitation could now be heard distinctly with each inspiration. From that day he remained in bed, and an infiltration of the entire lower lobe, and partially also of the apex

of the left lung, gradually developed itself with intense pyrexia of a remittent character. The sputa, for two days viscid and rusty, soon became more yellow but transparent and afterwards grass-green and continued so for some time.

On June 1, fourteen days after the profuse hæmoptysis, there was dullness behind from the spina scapulæ downwards with bronchial breathing, the line of dullness passing round the left side along the sixth rib. The vocal resonance diminished at the base of the left lung. During the month of June there were several exacerbations of the pyrexia accompanying, or probably caused by, pleurisy, with well-marked friction-sound in the left side and in front; but by the end of June the pyrexia began to abate (the temperature ranging between 99·5° and 101·4° F.) His general health improved, the appetite which had never quite failed increased, and also the local symptoms diminished in extent. In the beginning of July he was able to sit up a little every day, and by the end of that month he had so far recovered that it could be ventured to send him to Germany. The physical signs were then: no difference on percussion of both sides in front, distinct but slight dullness over the left apex behind, much more marked dullness from the spina scapulæ downwards, limited at the side by the line of the latissimus dorsi muscle. Bronchial breathing and consonant râles over the whole area of dullness. The right lung had remained perfectly free from disease.

I saw this patient again in Germany at the end of August when he was staying in the Taunus, and was pleased to find him much improved generally. He was not so anæmic as when he left London, and had gained flesh, but was still rather short of breath and the temperature still elevated. The right lung quite free. The dullness on the left was more limited in the side as well as at the back, and there were less râles than four weeks previously. He went on fairly with some intermissions, when, on November 31, he was seized with very profuse hæmoptysis and expired a week later. Unfortunately no post-mortem examination was made.

Remarks.—Here are three cases in which hæmoptysis occurred before either any, or at least any distinguishable, signs of chest disease had been present. In each case, a few days after a rather profuse hæmorrhage from the air-passages catarrh of the smaller bronchi, of which no signs were present immediately after the hæmoptysis, gradually developed itself, and in all three cases the lung-tissue became

involved. In the two first cases these inflammatory changes terminated in almost complete resolution, but in the third the infiltration of the lung-tissue was of a permanent character. The succession of the symptoms, especially the transitory character of the inflammatory changes in two of the cases, favours the idea that these changes were not merely concomitant with, but that they were caused by, the hæmorrhage, in the way indicated by Professor Niemeyer and as generally believed before Laennec.

The question where in such cases the blood comes from, whether from the mucous membrane of the air-passages, or from the rupture of a larger vessel in a cavity, or from lung-tissue breaking down, is not intended to form part of the present communication, as our cases do not furnish any conclusive evidence on this point. I only allude to it as Professor Niemeyer's theory has lately been opposed by Dr. Rasmussen,* on the ground principally that a bronchial hæmorrhage has never yet been demonstrated by post-mortem examination. Although this positive proof is still wanting, yet I think the possibility of hæmorrhage from the bronchi, in the same way as from the mucous membrane of the nose in epistaxis, must be admitted. But this question seems to me altogether of less importance here than the other one, whether blood which is not expectorated, or rather which has been driven into the air-vesicles by aspiration, may give rise to an irritative bronchitis or pneumonia. This question seems to be answered in the affirmative by the above cases. If once admitted that hæmoptysis, no matter in what way arising, may lead to pneumonic changes in the lungs, then it is easy to understand how it may bring on phthisis in lungs previously healthy, and how it may aggravate any lung disease already existing.

Whether hæmoptysis will be followed by such results, and to what extent, may be supposed to depend upon the amount of the hæmorrhage, and the locality at which this takes place in the air-passages or in the lung-tissue, as well as upon external circumstances, as, for instance, whether the patient keeps quiet and lies down or continues his avocations. The further course of such inflammatory changes, when once set up, is probably, apart from different external circumstances, principally influenced by the patient's constitution.

* Vide 'Edinburgh Medical Journal,' 1863, December.

The history of the above cases would seem to lead to the following conclusions:—

1. Profuse hæmoptysis is in some cases followed by a more or less extensive bronchitis, especially of the smaller bronchi, and by inflammation of the lung-tissue.

2. These inflammatory changes are capable of a complete resolution, or

3. They may lead to a permanent infiltration and induration with their consequences.

4. Practically this view implies the very important rule, that patients who have brought up blood from the air-passages or lungs ought to be very carefully watched, especially by means of the thermometer, for some days afterwards, even if the hæmorrhage have quite ceased, and that, however slight the symptoms following the hæmoptysis may be, the patient ought to be kept quiet until all febrile symptoms have disappeared.

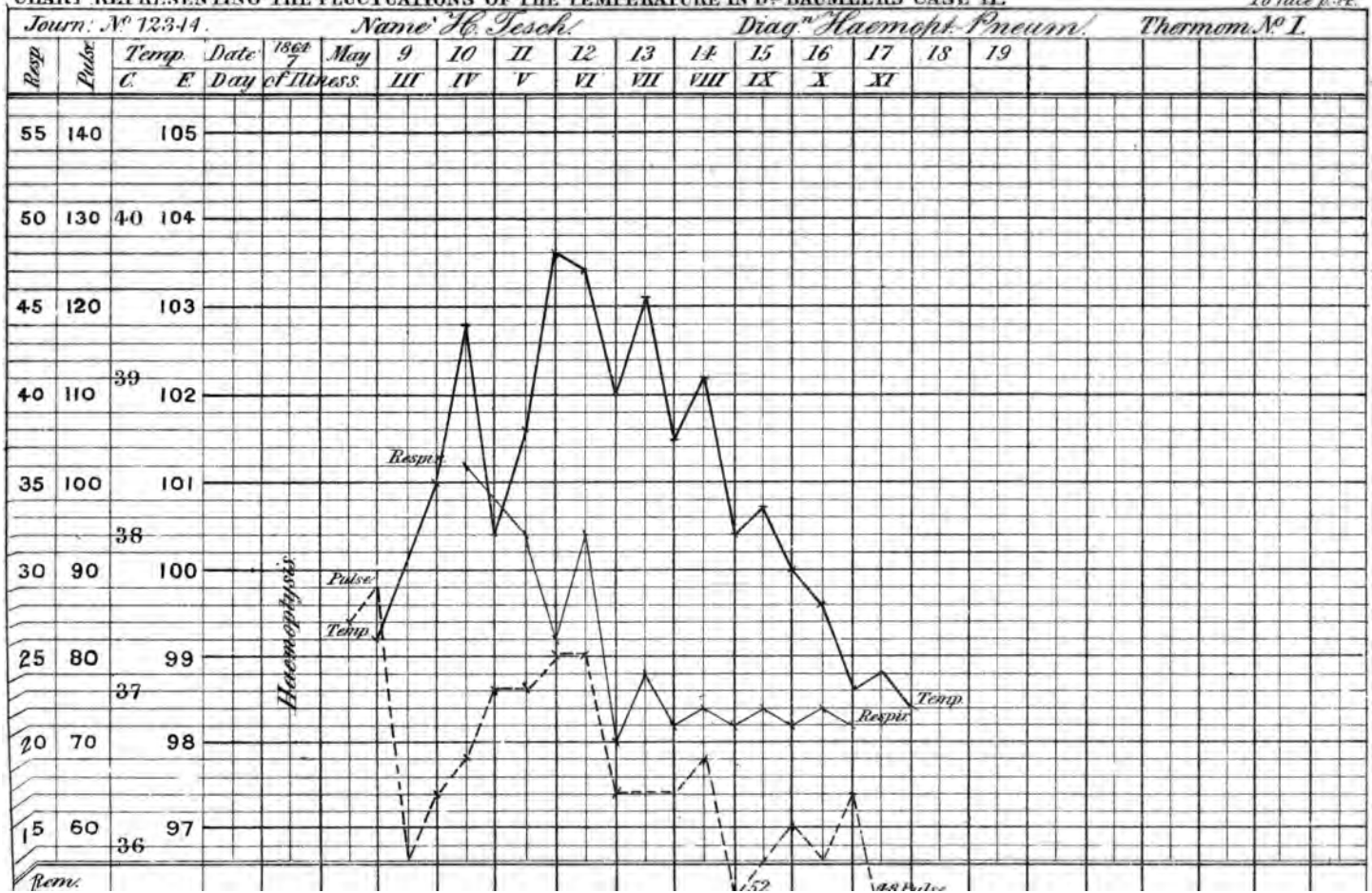
XIX.—*Large lacerated Wound on the outer side of the right Knee, laying open the Joint, and followed by Tetanus on the ninth day.* By Carsten Holthouse. *Read February* 26, 1869.

JOHN SEARS, aged 27, a fresh-coloured, healthy-looking young man, was admitted into the Westminster Hospital, under my care, on the evening of Nov. 4, 1868, slightly intoxicated, with the following history: He was driving a timber van, drawn by two horses (tandem fashion), when, on stooping forward to whip the front horse, he over-balanced himself, and fell in front of the wheel, striking his knee against it on falling; he was then dragged a considerable distance in front of the wheel, when, the horses being at length stopped, he was rescued from his position, placed in a cab, and brought to the hospital covered with mud. The skin all along the outer side of the right thigh was grazed, and the cuticle completely abraded; a large ragged wound, covered with mud, laid open the knee-joint on the outer side of the patella, and exposed the outer condyle of the femur and the under surface of the patella. The wound was first cleansed, and then washed with the carbolic acid lotion and dressed à Lister, and the limb placed on a ham splint.

On the following day, Nov. 5, the note is—'The patient

CHART REPRESENTING THE FLUCTUATIONS OF THE TEMPERATURE IN Dr BAUMLER'S CASE II.

To face p. 94



has not an unfavourable symptom; his bowels have acted well; his tongue is clean, and his appetite and his spirits good.' The limb being comfortable, was not disturbed. Full diet.

Nov. 6.—His general condition is as favourable as it was yesterday; but from there having been some bleeding from the wound after it was dressed on the night of his admission, the dressings are much soiled and a little putrid; they were therefore removed, when a large black slough, 4½ by 2 in. was disclosed on the outer side of the knee-joint; no inflammatory blush, however, extends beyond the slough, the upper margin of which is perfectly defined. The wound was well syringed with the carbolic acid lotion, and afterwards dressed à Lister. The excoriated surface of the thigh was dusted with the oxide of zinc, and a draught, composed of liq. opii sed., æther chlor. ā ʒss., aq. ℥j., was ordered to be taken at bed-time.

7.—Not an unfavourable symptom. Asked for some porter, which was granted, Oj. quotidie. The wound was cleansed and dressed as before, and a McIntyre substituted for the ham splint.

8.—Did not sleep well from pain in the joint, and complains of thirst; the tongue is moist and clean, but the bowels have not acted the last two days. A deposit of purpurates was observed in the chamber utensil. Pulse 106. As the limb felt less comfortable on the McIntyre splint, it was removed, and the ham splint again used; after this, the patient expressed himself as feeling very comfortable, and, except for the wound, quite well; three bottles of ginger beer were ordered him.

9.—He had a very good night, and looks well; tongue clean and moist; pulse 102; bowels have not yet acted; purpurates were still abundantly deposited from the urine. Says that since 7.30 this morning has had several jumpings in the knee; but the splint has slipped round, and he lies in a very uncomfortable position; on removing the dressings, a good deal of fœtid gangrenous débris poured out of the wound. It was well washed with the following lotion diluted, and a linseed meal poultice, made with equal parts of the lotion and hot water, was afterwards applied—acid. carbol., tinct. opii, ā ʒviij., aq. ℥xv.

10.—He slept well last night, and took a dose of the haust. sennæ co. this morning, which has acted four times. Looks a little pale, and the pulse has an irritable character

(106); tongue dry in the centre, and appetite fallen off. The wound looks well, and the excoriation is healing, and he complains of nothing but the occasional jumping of the limb. Beef tea and fish substituted for meat; ung. zinci parti excor. Purpurates have disappeared.

11.—Doing well, though appetite is still somewhat impaired; tongue moist and whitish; bowels not opened since yesterday afternoon; pulse 106. Still some jumping of the limb, though less than yesterday. There is a slight blush on the upper part of the leg, with some swelling, and tenderness on pressure. Slough continues to be thrown off, and there is no spread of the gangrene. Has had no rigors. Pt.

12, 10.30 A.M.—Has been sitting up in bed the last two days, supported by the bed rest; and last night, at 8.30, complained of having, he thought, taken cold, as he felt sore about the mouth, and had some stiffness of the neck. This morning at five, the house-surgeon was summoned to him on account of a sudden seizure of trismus; his tongue was between the teeth, bleeding and lacerated, and it was with much difficulty got back. He has only taken a little tea for his breakfast, as he could not eat on account of the closure of the jaws, which can only be separated sufficiently to get in the handle of a spoon, which he holds there as a wedge. His pulse is, nevertheless, better (94); his abdomen is not hard, his bowels have not acted, but he micturates freely. The wound looks well, and the leg, which was suspiciously swollen yesterday, is less so this morning. One grain of the extract of calabar bean in pill was ordered by the house-surgeon every hour, and he has taken three of them.

7 P.M.—Has continued the pills as ordered, and feels a little sick; he has, however, been well fed with beef tea and barley water, which he relishes, and seems no worse than in the morning. His bowels have acted well, and his abdomen is not harder than in the morning, nor has he had any clonic spasms. Pt.

13, 10.30 A.M.—Took a pill every hour yesterday up to ten o'clock P.M., and either five or six between then and the present time. The pupils are slightly contracted as compared with those of the patients in the two adjoining beds. The bowels have acted four times this morning, and he has made a large quantity of water. He is quite free from pain everywhere, and has had a good night, though he woke up for a few minutes every two or three hours, when a pill was given him. He looks and feels depressed in spirits, and a

little pale, being evidently alarmed at his condition; his pulse, however, is good (94), with power, and the appearance of the wound is perfectly satisfactory. Has taken beef tea, with crumb of bread in it, and also barley water, which he sucks in through a space left by the loss of the upper incisor on the left side, for the jaws are now so firmly and closely together, that the upper incisors overlap the lower. Complains of thirst, and craves for cold water. At 8.30 P.M. the face was flushed, the skin hot and bathed with perspiration; pulse 110. Muscles of the neck perfectly rigid, but those of the abdomen unaffected. He was in no pain, and had no spasms, but felt as if tied to the bed, and was unable to move his trunk in the least. The medicine, and food consisting of milk, beef tea, barley water, and brandy, were ordered to be given on alternate hours throughout the night.

14, 10.30 A.M.—Face less flushed than last night, and skin less hot, though still perspiring. Temperature 100° F.; pulse 120, more feeble. Jaw as fixed as before, and rigidity more general, affecting both arms and legs, with now and then slight clonic spasms, unattended with pain, which his wife calls 'inward convulsions.' There is slight risus sardonicus; the eyelids are kept nearly closed, and he cannot completely open them. He has not had a pill since 7 A.M.; and the pupils are not under the influence of the bean. His wife, who sat up with him, says he did not close his eyes through the night, and was delirious. The wound looks well, but syringing it excites jumpings of the limb. Ext. opii liquid vuln.

14, 8.30 P.M.—Face as flushed and skin perspiring as profusely as last night; but he is evidently weaker and less conscious, and his eyelids are closed as if asleep. On rousing him, he opens them, but the eyes do not converge or 'fix.' His mouth is partly open, and there is an interval of about one-third of an inch between the upper and lower incisors, and he can separate them somewhat further when told to do so. On giving him some barley-water and brandy he nearly choked, and cannot take more than a teaspoonful at a time without choking. His pulse is feebler (140), his abdomen more rigid, but there have been fewer spasms since the wound was dressed with the ext. opii. A quarter of a grain of the ext. physostigmatis in ℥xv. of water was injected subcutaneously at 10.30 A.M., 1 P.M., and 4 P.M., with the effect of producing contraction of the pupils. At 8.30 P.M. the medicine was resumed in one grain doses by mouth every two

hours. The urine voided from 10.30 A.M. of the 13th to 10.30 A.M. of the 14th amounted to 1150cc.=40½ oz.; specific gr. 1030; quantity of urea, 46 grammes=709·78 grs.; reaction rather acid.

15.—He gradually became weaker, and died this morning at 6 A.M.

16. *Post-mortem Examination at* 2 P.M.—Rigor mortis was strongly marked. The popliteal and peroneal nerves were traced upwards some distance beyond their junction, but nothing abnormal was discovered, except a slight ecchymosis on the posterior aspect of the great sciatic nerve one inch above its division, which did not extend into the substance of the nerve. The knee-joint contained no pus. Its cartilages were healthy, but the outer margin of the outer condyle was deprived of this covering, and the bone partly ground away and of an ash-colour, as if necrosed. The synovial membrane was thickened, and had a dry leathery look, but was not abnormally vascular. On removing the heads of the gastrocnemii from their attachments, two or three small abscesses, containing well-formed pus, were opened. They seemed to be between the heads of the muscle and the joint, while another small collection of pus was found in the substance of the popliteus, and another immediately above the joint, outside the synovial membrane, in the substance of the vastus externus muscle. The spinal cord was very decidedly softened as seen in situ, but was so mangled in the removal that it was not submitted to miscroscopical examination.

Remarks.—The chief points of interest in this case to which I would direct the attention of the Society are—

1. The absence of all constitutional disturbance for so long a period as four days after the receipt of such a serious injury.

2. The continued healthy condition of the wound from the beginning to the fatal termination of the case.

3. The abundant deposit of pupurates in the urine on the first occurrence of constitutional symptoms, and their disappearance after the action of the bowels.

4. The falling of the pulse from 106 to 94 shortly after the accession of the tetanus (possibly due to the action of the Calabar bean).

5. The limitation of the muscular rigidity to the head and face for the first two days, and the softness of the abdominal wall almost to the last.

6. The entire absence of pain throughout the whole course

of the disease; and lastly might be enumerated the somewhat unusual symptoms of contraction of the orbicular muscles of the eye and the occurrence of delirium.

Treatment.—As regards this, two questions suggest themselves. First: Could the tetanus have been prevented by amputation of the limb in the first instance, or at any period between the accident and its accession? As regards the question of primary amputation, this involves another, viz.—Was the general condition of the patient or of the limb such as to warrant it? Because, if not, it would certainly be unjustifiable to operate merely in anticipation of a possible contingency. Then, as to secondary amputation, would the chances of its success have been greater immediately after the tetanic seizure? Theoretically, it might; but, practically, the evidence in favour of such a proceeding is not encouraging. In the few cases in which recovery has happened, it is by no means clear that it was due to the operation, and it might possibly have occurred had amputation not been performed. In the second number of 'The Practitioner' is recorded a case, by M. Bourneville, in which amputation of the limb was performed on the day following the tetanic seizure; but, notwithstanding the exhibition of the Calabar bean, the patient died four days after the operation.

Secondly: Was the absence of pain due to the influence of the bean? I think we are hardly warranted in saying so; at least, this has not been observed in other cases where it has been given, and it is not one of its recognised effects. 'It does not influence,' says Dr. Fraser, 'the afferent or sensory nerves; but it directly and powerfully diminishes the reflex activity of the spinal cord.' According to Harley, it paralyses the motor nerves. If so, it failed in the present instance to reach the motor portion of the fifth, which supplies the masseter muscle; and in the cases in which this drug has been administered, it seems rather to have diminished the frequency and shortened the duration of the cramps than to have influenced the persistent muscular rigidity.

With our present knowledge of the pathology of tetanus, and of the morbid anatomy of the spinal cord, as revealed to us by the investigations of Dr. Lockhart Clark and Dr. Dickinson, recovery would seem almost hopeless, unless we could attack simultaneously both the peripheral nerves and the cord. The Calabar bean, by diminishing the excitability of the latter, fulfils one important indication, that, namely, of

procuring its physiological rest. We want a similar medicament for the afferent nerves; and it would be well worth trial whether opium (from its known paralysing effects on the nerves) might not fulfil a similar office for the latter. In the case just narrated, the liquid extract of opium applied to the wound on the 14th had a marked effect in lessening the frequency of the spasms; but its employment was probably resorted to at too late a period to avert a fatal termination.

It deserves notice that the analysis of the patient's urine, which is recorded in the note of the 14th, was made by Dr. Dupré, at my request, to test the soundness of Weiglin's assertion, that in tetanus and in all persistent muscular contraction there is a larger production of urea than when the muscles alternately elongate and contract. So far as a single example may be relied on, the analysis is confirmatory of Weiglin's statement.

Quantity of urea voided by the patient in 24 hrs., 709·78 grains: average quantity of healthy individuals, 465 to 620 grains.

XX.—*Case of Subacute Traumatic Tetanus successfully treated by the Calabar Bean.* By C. Holthouse. *Read February* 26, 1869.

WILLIAM WHITE, aged 40, a stout carman, was admitted into the Westminster Hospital, under my care, on the afternoon of August 12, 1868, in the following condition: Lies supine, with the head slightly thrown back, the trunk slightly arched, and the lower limbs extended; the whole body being rigidly fixed in this position. The jaws can be separated to the extent of three or four lines, displaying a thickly furred tongue. The abdominal wall is hard, but yields slightly to firm pressure, the bowels have not acted for two days, the urine is expelled involuntarily. He is in constant pain in the epigastric region, and about every five minutes is seized with painful cramps, during which the lips are compressed, the brows knit, and the breath held; these paroxysms last only a few seconds, during which the pain is felt most severely at the scrobiculus cordis. Pulse 90, soft and compressible; pupils of medium size, and active; skin moist and warm.

History.—The present symptoms came on on the 31st ultimo, with stiffness and pain about the neck and jaws, one month after a wound on the back of the right hand, from a cart falling on it. A cicatrix in the form of a horseshoe extends from the cleft between the thumb and forefinger of this hand to that between the middle and ring-fingers. Hyd. chlor. gr. v. statim; H. sennæ co. ʒj. cras mane si opus sit; strong beef tea ad libitum; brandy ʒviij.

13.—10 A.M. Got but little sleep last night, though the paroxysms of pain did not recur oftener than once in 20″. The bowels have not yet acted. Pulse feeble. Ext. physostigmatis, gr. ij., aquæ ʒiv., ft. mist., cap. ʒiv. 3tiis.

14.—10 A.M. The bowels having been well opened, the Calabar-bean extract was commenced, first in ¼ gr. doses every three hours, which after 4 P.M. yesterday was increased to ½ gr. every hour. At 2.30 A.M. he was sick and rather faint, and the house surgeon being sent for, administered stimulants, and ordered the discontinuance of the medicine; he recommenced it, however, two hours ago, in the same doses, and at present he looks and feels better, having turned on his right side and drawn up his legs; the abdomen has also become softer and more yielding. Pulse 92; pupils not contracted. No further action of the bowels. The interval between the occurrence of the paroxysms varies; till 4 A.M. it was about 10″, but since then it is longer. Pt. ext. gr. j. omni horâ; milk 2 pints; arrowroot.

15.—10 A.M. Has taken 1 gr. of the extract every hour when awake for the last twenty-four hours, and plenty of beef tea, milk, and arrowroot. Had a fair night's rest, and is better this morning, the general stiffness being less, and the paroxysms of pain less frequent and severe. Pulse 82, stronger. No contraction of the pupils (a drop or two of the mixture was put into the eyes of four patients to test the goodness of the extract, and in half an hour it had produced its effects on one patient, a child; but it was scarcely perceptible on the pupils of the other patients, who were adults). Patient asked for beer, which was granted. Pt. ext. Rice pudding.

17.—The condition of the patient not having materially changed, 3 grs. of the extract were prescribed every hour, but, after taking two doses, nausea and sickness were produced, though no contraction of the pupils: the dose was diminished to gr. jss. every hour while awake.

18.—Has passed a good night and feels better this

morning. There was no return of sickness after leaving off the 3 gr. doses of the extract, and he has continued to take 1½ gr. doses from time to time, but not hourly; he can open his mouth nearly to a natural extent, and move about his limbs, but the paroxysms of pain continue to recur, chiefly in the epigastrium. Pulse 80. Tongue moist and furred; bowels regular. He mentioned to me for the first time that he had suffered from tapeworm for the last five years, and that portions sometimes came away from him while walking. Omit ext. physostigm. ℞ Ol. ricini, ol. tereb. ā ʒiv. statim.

19.—10 A.M. Passed another good night, with scarcely any pain, and is comfortable this morning. Bowels have acted five times since yesterday, and several feet of worm have come away, with much of the tapering end, but head cannot be discovered. Has resumed the use of the Calabar-bean extract in gr. jss. doses. Abdomen is still hardish. To take the following draught to-morrow morning fasting: Ext. filicis liquid. ʒj., mucil. q. s., aq. ad ℥j.

20.—Took the above draught at 5 A.M., and 1 oz. of ol. ricini at 10.30 A.M. The bowels have acted five times, but no traces of tænia could be discovered in the stools. In other respects the patient's condition is not materially changed, the spasms only becoming more frequent when the Calabar-bean extract is omitted.

21.—There has been no further action of the bowels; he passed a comfortable night, and has made a good breakfast of tea and bread and butter. Pulse 70, of fair power; spasms not frequent; abdomen still hardish.

22.—Bowels acted this morning, but no portions of tænia could be discovered in the motions. Spasms came on every few minutes, but are only of a moment's duration, and not severe. Pt. Ext. gr. iij. qque horâ.

23.—Took the medicine regularly till 10 P.M., when he complained of faintness, and it was discontinued for four hours. Passed a restless night, with frequent slight spasms till 5 A.M., when he became easier, and so continues. Tongue clean; pulse 88; abdomen as yesterday. Pt. Ext. gr. jss. qque. horâ.

24.—At 7 P.M. last night the house surgeon was sent for on account of the sharpness and frequency of the spasms. ℥jss. of the mixture, containing gr. ivss. of the extract, was administered, after which the spasms became less frequent, and the patient passed a tolerable night. The bowels

have acted this morning, and the abdomen is softer; tongue clean; appetite good; pulse 82. One chop. Pt. gr. jss. qque. horâ.

25.—Has had no return of the spasms, slept tolerably well during the night, and bowels have acted this morning. Tongue, pulse, and appetite satisfactory. Pt.

27.—Improvement continues. He sat up to his tea last evening, and has a fair appetite. Spasms still occasionally come on, but are quite of a momentary character, and not severe. He does not take the medicine regularly, but only when attacked by a pain. Pulse 82, somewhat feeble.

Sept. 2.—Has continued slowly improving since last note, and is now fairly convalescent. The spasms have entirely left him, and the abdomen is soft and compressible; tongue clean; appetite good; pulse 74. Complains only of feeling weak. Full diet; ale Hj., H. quinæ ʒj. ter.

Sept. 20.—Discharged well.

The deductions I would draw from this case are the following:—

1. There is every reason to believe that the exciting cause of the disease was the wound on the back of the hand.

2. There is no evidence to show that the existence of the tapeworm exercised any influence either in exciting or in keeping up the tetanic condition.

3. As recoveries from subacute tetanus were not rare before the introduction of the Calabar bean, we cannot say absolutely that recovery in the present case was due to the action of that drug. It appeared, however, to prolong the intervals between the paroxysms, and to render them of shorter duration and less severe.

4. Larger doses of the drug may be given (in one instance as much as gr. ivss. of the extract) than were formerly thought compatible with safety.

XXI.—*On a form of Enlargement of the right Leg and Thigh, with an occasional discharge of Chylous Fluid.* By W. H. Day, M.D. *Read February* 26, 1869.

HISTORY.—J. C. D., aged 7 years, of healthy appearance, and born in the country of healthy parents, was first observed by his nurse when two years and a half old to have his right leg slightly larger than his left. At this time the enlargement was limited to the leg, and did not extend above the knee. It was most apparent above the ankle, and on the inner and front aspect of the tibia. It felt somewhat firmer on pressure than the opposite limb. As it caused no inconvenience, and the child was in good health, no great importance was attached to it. Six months later the circumference of the right calf of the leg exceeded by two inches that of the left, and the foot was noticed to be slightly œdematous when he had been standing or wearing a slipper or low shoe; when his laced boot which he usually wore was taken off, the foot appeared to have undergone more compression than the opposite, and always felt colder. The temperature, however, of the leg and body generally was natural, and the skin was neither inflamed, thickened, nor in any way altered from that of health, with this difference that it was tightly expanded over the tissues beneath. His pulse was quiet and regular, and all his secretions healthy, cold baths and friction having been adopted from his birth, and milk and eggs entering largely into his daily diet.

Dr. Humphry of Cambridge saw him, and advised that he should wear an elastic stocking to extend from the foot to the knee. In 1864 the enlargement increased, and the knee-joint of the affected limb appeared larger than the left; the swelling now extended into the thigh, and presented the same firm and inelastic feel as the calf of the leg. Dr. Humphry saw him again and attached very little importance to the increased dimensions of the thigh. A silk elastic stocking was worn from the toes to the groin. During the year 1865 a patch of small yellowish-white spots appeared, ten or twelve in number, defined in outline and distinct from each other. They were situated on the part of the knee immediately above the head of the tibia, and they seemed to contain a cheesy kind of matter, similar to what is often observed in small encysted tumours. They gra-

dually dried up, and disappeared in the course of three months without rupture of their contents. After playing or running about, the leg and thigh felt extremely hard, and gave the impression that the cellular tissue was the principal seat of the mischief. The swelling was brawny and tense like that observed in the phlegmonous form of erysipelatous inflammation. When the system was out of order from any cause, as from cold, indigestion, or fatigue, the limb always became larger, more heated, and covered here and there with irregular and inflamed patches of bright erythema. One large patch was a persistent occupant of the right gluteal region at these times, and it has left a brown and discoloured condition of the skin, to be inflamed again from any recurrence of constitutional excitement. In walking he seemed to shuffle along, with a stooping gait, rather dragging the affected limb after him, and did not flex the knee-joint perfectly. He was soon tired on exertion at this period, and in his walks lagged behind his companions though younger than himself, and complained occasionally that his leg ached. In April 1866, the following were the measurements of the limb:—

Upper third of thigh	14½ inches.
Middle of thigh	14 ,,
Knee-joint	11¾ ,,
Below knee	9 ,,
Calf of leg	9¼ ,,
Lower third of leg	6¼ ,,
Instep	7 ,,
Base of toes	6½ ,,

He was now shown to Mr. Paget, who said he had never seen a similar case in anyone under twenty, but judging by its likeness to what he had often seen in adults, he thought it must be an instance of obstruction of nearly the whole length of the femoral vein. The great size of the limb appeared to be due not only to œdema, but much more to growth, and similar growth, especially of muscles, he had several times observed in cases of obstruction of veins occurring slowly in persons of good general health. The treatment Mr. Paget advised included whatever would promote the force of the arterial stream in the limb; warm clothing, frictions, the internal use of iron or other tonics, moderate exercise, and recumbency when at rest. He discountenanced anything like mercury, iodine, or any depressing means. Mr. Paget said he could not positively foretell the progress of the case, but he hoped that, with the enlarge-

ment of the unobstructed veins, the limb would (as in adults) cease to enlarge. This treatment was followed out, and the patient's health much improved during the next two years. At the close of the year 1866, the prepuce, which had been gradually enlarging for some months, became very heavy and pendulous, the hypertrophied part having the same indurated feel as the thigh. The glans penis could not be seen, and on three separate occasions the phymosis was so complete that the part swelled extremely and became inflamed and œdematous. In the beginning of the year 1867, the urine began to irritate and to dribble away. The prepuce had now attained a great size. In July 1867, Mr. Paget removed the prepuce. As the excessive growth was limited to the prepuce and was effectually removed, it was hoped that the hypertrophy would not attack the healthy structures of the body of the penis. The sore healed quickly after the operation, and the patient went into the country. Three months later, the part began to show indications of renewed growth. In March 1868, the following were the measurements of the limb:—

Upper third of thigh	16	inches.
Middle of thigh	15½	,,
Knee-joint	13	,,
Below knee	12	,,
Calf of leg	11	,,
Lower third of leg	11	,,
Above ankle-joint	7¾	,,
Instep	9	,,
Base of toes	6½	,,

March to September 1868 limb largest when it discharged, and lessened at once.

It will be noticed here that the dimensions of the lower third of the leg were exactly the same as those of the calf, and the limb at this period was at its largest size. During this year (1868) a small white pearly-looking vesicle appeared on the upper part of the penis, where the skin joins the mucous membrane, like that seen in herpes zoster. Similar herpetic spots made their appearance at various times on the leg, foot, and scrotum, and then gradually dried up and faded away. In September 1868, the patient was in the country in unusually good health, running about in the woods and fields all day. The leg was much swelled, and in walking he had the same difficulty in bending his right leg which I have mentioned at the commencement of this report. One night, after riding a short distance on a pony,

the vesicle on the penis ruptured, and a discharge issued from it which saturated the bed and mattress. It was presumed that he had micturated during sleep, no suspicion being directed to its proper source. Next morning he was up and ran about as usual, but in the day he became wet up to the waist, and then was first observed a thin milky-looking fluid trickling from the ruptured vesicle. I regret to say this secretion was not preserved for examination. He kept his bed for a day and a half, and then seemed as well as usual. The limb was much lessened in size, feeling softer and more natural, instead of the stony induration which had been a striking feature of the hypertropy. A month afterwards, in October 1868, a slight recurrence of the discharge having the same characters again took place. The ruptured vesicle was supposed to be a varicose lymphatic, and the fluid flowing from it to be lymph. Mr. Paget remarked: 'I have not before seen such a case, but they are recorded, and the issue of similar fluid is, I think, not rarely observed in the forms of elephantiasis which are connected with disease of the lymphatics.'

In November 1868, the limb measured:—

Round middle of thigh . . .	14 inches.
Round calf of leg	9½ „

November 1868, after first discharge, same size as April 1866.

From this time the child was remarkably well up to January 12, 1869, when, after some emotional excitement, the discharge again returned from the same vesicle on the penis, and continued to dribble away for some hours.

Not less than half a pint of creamy-looking fluid escaped. About three ounces were collected and transferred into a narrow-necked bottle; another ounce, which was allowed to remain in a wine-glass for a few minutes only, became so firmly coagulated that when an attempt was made to pour it into a bottle it was found to have the consistence and appearance of blanc-mange. The next day he was seized with a shivering fit, amounting to rigor. He was cold, pale, and chilly, and lay during the afternoon in front of the fire; he was thirsty, lost all appetite, and in the evening vomited. The ulcerated lymphatic on the penis had dried up, leaving a small whitish spot to mark its site. Two smaller and similar vesicles appeared for the first time on the glans penis, and irregular inflammatory patches were scattered over the affected limb. He now complained of great pain under the ball of the great

toe, which was swelled and slightly inflamed. It was exceedingly tender to the touch, and he cried out from the suffering; the pain was limited to the great toe, the foot generally was swelled, and there was a small cluster of minute vesicles on the dorsum of the foot. The affected limb was much lessened in size.

Characters of the Fluid and Microscopical Examination.—The chylous fluid had a faint sickening odour, a salt-like taste, and was of alkaline reaction. There was no uniformity in the rapidity of coagulation, one specimen being less milky and more serous than another. The clot bore the closest resemblance to that of blood, except being softer and destitute of red corpuscles. Dr. Beale, who kindly examined the fluid, found it to contain a large quantity of fatty matter and fibrine, a molecular base like chyle, and numerous pale cells resembling white blood corpuscles (chyle corpuscles).

January 14.—The patient became restless, and complained of pain in the foot towards morning: the great toe and foot felt very heated, and the rest of the limb was much hotter than the other. The front aspect of the right leg was covered with irregular erythematous patches, his expression was pale and exhausted, with dark areola round the eyes, and a slight flush on both cheeks. The tongue was moist and covered with a thin whitish fur at the back, the tip and sides being clean. Pulse 120, weak, small, sharp, and easily compressed. General surface of the body hot. The varicose lymphatic has dried up and ceased to discharge, but the body of the penis is inflamed and swelled; the belly is flat and rather concave, but no glandular enlargement can be detected in the abdomen, nor in either inguinal region. The liver, spleen, and lungs, are healthy. The heart's action is quick and somewhat tumultuous, but the sounds are free from murmur. The foot was wrapped in cotton wool, and covered with oiled silk. In the axilla the temperature was 101° F., in the right popliteal space 100° F.

15.—Passed a very restless night from pain in the foot, and was unable to procure any sleep till 4 A.M. He was tired and disposed to sleep, but the pain would wake him and the limb start. The inferior aspect of the last phalanges of the toes, and of the soft parts covering the metatarso-phalangeal articulation was swelled, hot, and of waxy whiteness. The ball of the great toe presented a circumscribed patch of redness the size of a shilling. It was shining and exquisitely tender, and presented all the appearances of gouty inflamma-

tion. Temp. in right axilla 97°; under right knee 97°; under left knee 96°; right groin 99°; mouth 97·3° F.; pulse 104; resp. 28 per min.; skin cooler; urine very clouded, containing an abundance of lithates of a whitish and pink character; reaction acid, non albuminous, sp. gr. 1026.

16.—Passed a better night, though he has suffered paroxysms of pain in all the toes, especially the great toe, where the swelling, heat, and redness are increased. The slightest movement of the great toe causes acute pain, and his expression is one of alarm. Has no appetite, but took some soup and a little port wine and water. The bowels acted naturally, and the constitutional symptoms are much the same as yesterday. The toes have been kept moist with a warm lead and opiate lotion.

17.—Slept soundly the whole night, and has not complained of pain during the day; the redness has nearly disappeared, but the foot is still very hot and œdematous—the circumference at the base of the toes measures an inch larger than the sound foot. Appetite has returned.

18.—He is up to-day lying on a sofa. He looks much better, and is free from pain, all febrile symptoms having vanished. The foot is still swelled and œdematous, but the redness has disappeared. The pulsation in the right iliac artery is distinctly felt, but not quite so strong as on the left side; pulsation is appreciable in the right femoral for nearly an inch below Poupart's ligament, where it is lost, rather from the vessel passing beneath dense and bulky tissues than from any obstruction to the passage of blood. The corrugations of the scrotum are wider and more marked than I have ever observed before, and there is on this part a pale and whitish arborescent appearance of dilated lymphatics.

19.—He had a return of pain and heat in the foot from being up, and got no rest till four o'clock in the morning. There has been a slight discharge of milky fluid to-day.

Powdered oxide of zinc and tannin in equal proportions were sprinkled over the pimple.

20.—The fluid which has been discharged to-day is exactly the colour of fresh lymph from a well-matured vaccine vesicle. In three minutes after being received into an ordinary wine-glass, it coagulated so firmly that when the glass was inverted not a drop escaped. Half an ounce, which was discharged later in the day, was more milky, and separated into clot and serum; the clot in this case resembled that of

blood, except in colour and firmness. A microscopical examination proved the unmistakeable presence of four red blood corpuscles.

The following is the size of the two limbs on February 3, when the photographs were taken:—

	Right or diseased limb	Left limb
Upper third of thigh	15½ inches.	12½ inches.
Lower third of thigh	12 "	9½ "
Knee-joint	11½ "	10 "
Calf of leg	11¼ "	8½ "
Round ankle	10½ "	9½ "
Base of toes	7½ "	6½ "

This must be allowed to be a case of extreme interest and rarity, and is probably unique in its history and progress. The early period of life when the want of symmetry in the size of the two limbs attracted notice leaves scarcely a doubt that the affection was congenital, seeing that no disease of infancy nor accident had happened to account for it. The slow progress in the growth of the enlarged limb, its stationary condition for some months, the excellence of the patient's general health, and the non-enlargement of the superficial veins, induced me for a long time to doubt whether any impediment existed to the circulation. I was rather forced to the conclusion that the pathology of the affection was nothing more than an inoffensive hypertrophy of the subcutaneous tissues of the limb, and this supposition was highly probable so long as the size remained stationary, and was limited to the leg; but immediately it crept up above the knee and involved the thigh the probabilities of some deepseated obstruction to the circulation became clearer. During the last year, since the lymphatic character of the complaint has so developed itself and the discharge has taken place, the general health (for the first time, it may be said) has begun to suffer. The occasional febrile attacks and vomiting of clear bile would be in some measure explained by the constitutional excitement caused by the nutritive material being diverted from its proper channel and carried out of the body. It may be mentioned that he was never jaundiced, and no bile was at any time found in the urine. In all the well-marked cases of chylous urine which are recorded, weakness and prostration of strength have been present. In the present case, the patient has evidently felt the effect of the drain, and symptoms of constitutional derangement have begun simultaneously with it. The tongue is clean and shining; the pulse small and weak, and his ap-

pearance delicate; loss of appetite and febrile disturbance are now of common occurrence. In the forty-sixth volume of the 'Medico-Chir. Trans.' for 1862, Dr. Buchanan of Glasgow has related a case of white fibro-serous discharge from the thigh, which seems in many respects to resemble this. He gives a summary of the only three other cases which he finds recorded of similar discharges from the cutaneous surface occurring in temperate latitudes. There is, however, another case published by Dr. Carter of Bombay in the forty-fifth volume of the 'Medico-Chir. Trans.' In this case, a copious milky fluid was discharged from a small pimple a few inches below Poupart's ligament. Here the inguinal glands were greatly enlarged. Still, looking at the case in question in all its details, and the course and progress it has taken, especially with regard to the singular form of inflammation in the foot, it is one that offers much speculation for enquiry.

The following conclusions seem established in the case:—

1. That it is a form of elephantiasis, connected with disease in the lymphatic system.

2. That the enlargement in the leg, when first detected, was owing to some deep-seated obstruction to the circulation, and that the limitation of the swelling to the leg showed the impediment at this stage was slight, and promised to pass away.

3. That the presence of chyle corpuscles satisfactorily settles the question as to the nature of the fluid, and proves it to be chyle. They were numerous, large, and perfectly developed. The coagulation was rapid and complete, and the fibrine abundant. In one specimen there was unmistakeable evidence of four red blood corpuscles. The physiological inference is, therefore, that the milky fluid passed directly from the thoracic duct into the neighbourhood of the dilated lymphatic vessels, and thus, by a retrograde movement, found its way out of the system. We are driven to this conclusion, because the composition of the chyle varies very much according as it is derived from the lacteal vessels, from the mesentery, or from the thoracic duct. The abundance of fibrine and chyle corpuscles, and the rapidity of coagulation, point to the latter spot as that of communication.

4. Assuming, then, that this enlargement of the limb is connected with disease in the lymphatic system, it does not seem so extraordinary that the lymphatic vessels should con-

tain chyle ingredients, bearing in mind their readiness to absorb any soluble substances with which they may happen to be in contact. We know that the lymphatics of the liver may contain bile when situated in the neighbourhood of an over-distended gall-bladder and bile ducts, or pus when near an abscess or an ulcer. It seems to be in this way that the diseased or varicose lymphatics discharge their contents into the urinary channels in cases of chylous urine.

5. That the great size the limb attained was owing to œdema and fibrinous infiltration into the subcutaneous tissues of the limb, as well as to growth, it may be, of the muscles; and that possibly there may exist in addition to these changes some fatty degeneration of their muscular structure.

6. That the recent foot affection, and the pain and inflammation limited to the toes, without a tendency to the discharge of any fluid, and bearing no apparent relation to the drain of chylous fluid on the occasion referred to, might have been a sympathetic form of inflammation limited to the lymphatics of the foot, without the usual tendency to spread upwards.

7. That with the improvement in the thigh, the foot and lower third of the leg and ankle have become much larger. Recent œdema is a marked feature of the swelled foot; the leg, that of increase of bulk and size, as formerly observed in the thigh. Is this an indication of abatement of the disease and improvement passing from above downwards, or is it a sign of the steady advance of the disease to more serious complications?

Report on Dr. Day's *Case of Discharge of Chylous Fluid.*

We have nothing to add to Dr. Day's description of this case, so far as the general condition of the boy and the surface appearances of the affected parts are concerned. The ridged lines described as dilated lymphatics and vesicles are abundantly evident.

The right lower limb from Poupart's ligament in front, and from the gluteal region behind, is much larger than the left, and this enlargement seems due to increased bulk in all its tissues. Besides confirming the general accuracy of Dr. Day's measurements of the thigh and leg, we obtain the following measurements of the bones of the limb:—

(1.) Width at malleoli,	left side	2·15 inches.
	right side	2·3 „
(2.) Width at condyles,	left side	3 „
	right side	3·34 „
(3.) Width of middle of patella,	left side	1·7 „
	right side	1·85 „
(4.) Length of limb,	right side	+ ·85 of an inch.

From these measurements we conclude that the several bones are longer, and in all respects larger, than those of the opposite (left) extremity. The over-length of the right limb has occasioned a considerable curvature of the spine in the lower dorsal and lumbar regions, which disguises the over-length when the boy walks.

The child, of his own accord, states that he can push and resist more strongly with the right than with the left leg, and he balances the body from choice and most firmly on the right foot.

From the examination of the patient we find: 1. That in this case there is an overgrowth of the whole affected limb, in which the bones and muscles participate no less than the skin and subcutaneous cellular tissue; 2. That there is an intimate connection between the distended state of the lymphatics of the limb and the hypertrophy; and 3. That the liquid discharged is lymph.

In addition to the cases referred to by Dr. Day, we find that several similar cases are recorded by other authors.

One of the most remarkable is to be found in a paper on 'Lymphorrhagia with dilatation of the lymphatic vessels,' published by M. Demarquay in 1853. The patient, a girl of seventeen, had enlargement of the right lower limb and groups of vesicles with distended subcutaneous lymphatics on the belly in the neighbourhood of the groin. These vesicles discharged from time to time a liquid, sometimes like whey, at others like chyle.

A perfectly similar case is recorded by Dujardin in 1854.

In another case, recorded by Huguier, the vesicles were situated on the prepuce; in a third, by Prof. Lebert, on the scrotum.

From these and other instances, the following inferences may be drawn as to the nature and character of the ailment:—

The disease may be recognised: 1. By the position of the groups of vesicles and distended subcutaneous lymphatics, which are usually either on the external organs or on the skin of the belly or thigh, near the groin; 2. By the

character of the vesicles, and the fact that they are often connected together by ridge-like elevations; 3. By the existence of enlargement.

As serving to illustrate the connection of the hypertrophy with the distension of the lymphatics, we would further refer to the important researches of Prof. Virchow, as to the relation between true hypertrophy of the tongue and dilatation of the lymphatic vessels of that organ. The two remarkable cases which form the subject of his investigations, go far to show that there is an intimate relation between overgrowth and lymphatic plethora.

We regret that the limits of this report do not permit of our referring to other observations which bear on the subject, as, for example, the recently published researches of M. Anger on erectile lymphatic tumours.

J. B. Sanderson.
G. W. Callender.

Appendix (A).—*Note of a Case of Varicose Lymphatic Vessels of the right lower Extremity.* By Mr. Berkeley Hill.

JAMES SMITH, a navigator, aged 22, six feet high, born in Oxfordshire, was admitted into University College Hospital on September 5, 1866. He was at first under the care of Mr. Berkeley Hill, and subsequently under that of Mr. Marshall. The patient had been healthy all his life until the present disease began in his leg. He knew of no relative suffering from a similar affection. Two years ago a horse fell on his right leg and bruised it. Shortly afterwards he noticed that the thigh was swollen and that it ached at night when his work was done. After a while two or three teaspoonsful at a time of a milky fluid would flow away, which he said 'settled into a jelly.' The quantity of fluid gradually increased, so that he sometimes lost half a pint in a few hours. The periods of escape of fluid were preceded by loss of appetite and followed by such lassitude that for some days afterwards he could not work. When examined on admission, the right limb had a brawny feel from the ankle to the hip, but did not pit on pressure. It measured at the knee and hip one inch more in circumference than the other leg. The skin had its natural tint. On the inner side of thigh were groups of white elevations

the size of a pea, one of which being pricked allowed a milky fluid to escape. None of the subcutaneous veins were enlarged: the lymphatic glands in the groin were just perceptible. The left leg never swelled, and a few white papules on the scrotum were the only trace of the same disorder elsewhere. The patient was carefully examined, but appeared perfectly free from visceral disease. The urine, constantly examined during many months, never contained albumen or other abnormal constituents. The fluid, of which several ounces were collected on different occasions for examination, was milky, alkaline, slightly yellowish. It coagulated spontaneously in seven to ten minutes after escape into a jelly-like opaque mass. The clot shrank quickly to a purplish nodule the size of a nut, the rest becoming again a milk-like fluid. Under the microscope the fluid was seen to contain blood discs, large nucleated cells and granules. An analysis of three samples of the fluid was made by Dr. Matthiessen of St. Bartholomew's Hospital, and is included with those of other observers.

The patient submitted during a long stay in the hospital to various treatment at the hands of Mr. Marshall, who intends publishing the case himself, with an account of a microscopical examination of some of the diseased tissue. The patient left the hospital in April 1867, wearing an elastic stocking and suffering much less from the disorder than before he was treated. He has been heard of once since in tolerable health.

Appended to the foregoing is a list of cases of lymphorrhagia and chylous urine collected by Mr. Berkeley Hill:—

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J. B. Sanderson.
G. W. Callender.

Appendix (A).—*Note of a Case of Varicose Lymphatic Vessels of the right lower Extremity.* By Mr. Berkeley Hill.

JAMES SMITH, a navigator, aged 22, six feet high, born in Oxfordshire, was admitted into University College Hospital on September 5, 1866. He was at first under the care of Mr. Berkeley Hill, and subsequently under that of Mr. Marshall. The patient had been healthy all his life until the present disease began in his leg. He knew of no relative suffering from a similar affection. Two years ago a horse fell on his right leg and bruised it. Shortly afterwards he noticed that the thigh was swollen and that it ached at night when his work was done. After a while two or three teaspoonsful at a time of a milky fluid would flow away, which he said 'settled into a jelly.' The quantity of fluid gradually increased, so that he sometimes lost half a pint in a few hours. The periods of escape of fluid were preceded by loss of appetite and followed by such lassitude that for some days afterwards he could not work. When examined on admission, the right limb had a brawny feel from the ankle to the hip, but did not pit on pressure. It measured at the knee and hip one inch more in circumference than the other leg. The skin had its natural tint. On the inner side of thigh were groups of white elevations

the size of a pea, one of which being pricked allowed a milky fluid to escape. None of the subcutaneous veins were enlarged: the lymphatic glands in the groin were just perceptible. The left leg never swelled, and a few white papules on the scrotum were the only trace of the same disorder elsewhere. The patient was carefully examined, but appeared perfectly free from visceral disease. The urine, constantly examined during many months, never contained albumen or other abnormal constituents. The fluid, of which several ounces were collected on different occasions for examination, was milky, alkaline, slightly yellowish. It coagulated spontaneously in seven to ten minutes after escape into a jelly-like opaque mass. The clot shrank quickly to a purplish nodule the size of a nut, the rest becoming again a milk-like fluid. Under the microscope the fluid was seen to contain blood discs, large nucleated cells and granules. An analysis of three samples of the fluid was made by Dr. Matthiessen of St. Bartholomew's Hospital, and is included with those of other observers.

The patient submitted during a long stay in the hospital to various treatment at the hands of Mr. Marshall, who intends publishing the case himself, with an account of a microscopical examination of some of the diseased tissue. The patient left the hospital in April 1867, wearing an elastic stocking and suffering much less from the disorder than before he was treated. He has been heard of once since in tolerable health.

Appended to the foregoing is a list of cases of lymphorrhagia and chylous urine collected by Mr. Berkeley Hill:—

1. Friedreich, 'Würtzburger Verhandl.' Bd. ii. p. 319. 2. Carswell, 'Pathol. Anat.' Pl. 4. fig. 4. 3. Demarquay, 'Mém. de la Société de Chirurgie,' t. iii. p. 139. 4. Dujardin et Gubler, 'Mém. de la Soc. de Biologie,' 1854. 5. Ollivier, 'Dict. de Méd.' 1838, Art. Pathol. des vaisseaux lymphatiques. 6. Fetzer, 'Arch. f. physiol. Heilkunde,' Bd. viii. p. 128, 1849. 7. Huguier, 'Bull. de la Soc. de Chirurgie,' ii. p. 592, 1852. 8. Schönlein, 'Virch. Arch.' Bd. viii. p. 129. 9. Cannobio, 'Journ. de Pharm. et de Chimie,' t. viii. p. 123. 1845. 10. Oer, 'Glasgow Med. Journ.' 1859, p. 356. 11. H. V. Carter (Bombay), 'Med.-Chir. Trans.' vol. xlv. p. 189.

The following are analyses by Dr. Matthiessen of the liquid collected:—

I. Collected Sept. 18, at 9,30 A.M. and 2 P.M., each time one hour after a meal	II. Collected Sept. 24, three hours after breakfast	III. Collected Sept. 24, at 4 P.M.
Water . . . . . 91·55	92·95	91·39
Albumen }	5·15	5·77
Fibrin } . . . 7·60	0·15	·26
Fats }	1·10	1·48
Salts . . . . . 0·85	0·65	1·10

APPENDIX (B).—*Note of a Case of great Enlargement of the whole of the right lower Extremity, with at times a flow of milky-looking Lymph from behind the Ankle; lymphatic Engorgement.* By Dr. CHOLMELEY.

LOUISA R. has been under my observation during the last two years, having been admitted into the Great Northern Hospital in July 1867, a second time in 1868, and again for a third time about May 1869.

She is the fourteenth of seventeen children (born alive) of the same father and mother. Owing to imperfect development of the nipples, her mother was never able to suckle any of her children, and of the seventeen born alive no fewer than twelve died in infancy; eleven died from marasmus, while the twelfth had scarlatina followed by dropsy, and sank after nine months' illness. The other four children are all now in good health, and have never been seriously ill. The father and mother are both living, and in good health, save that for the last few years the father has been gouty.

Louisa R. was, like her brothers and sisters, born at full time, but was born deeply cyanosed; her lips and finger nails were dark blue, her face livid, and the general surface of the body dark. Respiration was very laboured and sighing, and for many weeks it was not supposed that she could live; however, she survived and throve, i. e. she was always, as now, well nourished and fat, though for the first four or five years she suffered frequently from difficulty of breathing, and 'attacks of inflammation on the chest,' any exposure to wet or cold almost always bringing on such attacks. When she was about $5\frac{1}{2}$ years old a swelling appeared in the right leg and ankle, and from that time the swelling has gradually increased and spread upwards, though two years elapsed before it extended above the knee. The

increase in size was always greater towards the evening; and her mother states that if a boot was put on when the child first got up, the swelling did not effect the foot; but when she went through the day without a boot, the foot also swelled, so that late in the day the boot could not be got on.

In the third year, when the patient was between seven and eight, the swelling began to affect the thigh also, and extended slowly and steadily upwards till the whole of the limb up to the groin was implicated, but the swelling has never extended above the inguinal line.

The patient has been under observation and treatment at many institutions—the Islington Dispensary, the Ormond Street, University College, and St. Bartholomew's Hospitals, but without any benefit. She was first sent to the Great Northern Hospital, by Dr. Walker of Islington, in 1867, and I have tried the effects of treatment by rest in bed, with elevation of the foot, graduated bandaging from the toes to the groin, and pressure on the femoral artery, but though the swelling has been considerably diminished for a time, no permanent benefit has been produced, the enlargement of the limb always returning rapidly as soon as the patient was allowed to be about again.

Present Condition.—Short, stout, and generally healthy looking, with a good bright red colour in the cheeks and lips, but is easily affected by cold, and then complains of 'want of breath' and a feeling of tightness in the chest; and at such times the complexion assumes a markedly livid tint, respiration becomes somewhat laboured and noisy, the extremities are cold, and the nails dark blue.

No morbid sounds are heard in the lungs. The pulse is normal as to frequency and rhythm, and of fair volume and force; but all over the heart there is heard a soft, blowing, systolic murmur, which is loudest at the junction of the second left costal cartilage with the sternum.

The entire right lower extremity is greatly and uniformly enlarged; it feels soft, firm, and elastic, the lower part of the leg being firmer and more tense than the rest of the limb; in colour and temperature it does not differ from the fellow limb, and as far downwards as the middle third of the leg the skin is as soft and smooth, but over the lower part of the leg, to the ankle, the skin is harsh, rough, and rather dry, and the epidermis has a broken scaly appearance, and on the outer side above the ankle are about a dozen soft, smooth, red, flattened papules, about the size of a split pea.

Round the ankle and over the dorsum of the foot the skin is again soft and smooth. The skin of the great, second, and third toes has a thickened, hypertrophied appearance, and their upper surface is partly covered by rough hard elevations looking much like a half-aborted and dried herpetic eruption; on some occasions there has been a slight discharge from these spots, just enough to wet the sock, but not to allow of its character or nature being observed. Near the knee and round the heel are a few papulæ as large as peas, and at the back of the ankle, over the tendo Achillis, is a soft humid patch, from which on the day of the patient's admission, a milky-looking alkaline fluid dripped, rather fast, for about an hour, but ceased on her being placed in bed, and has not since returned.

The affected leg is much more hairy than the sound one, but I have not been able to satisfy myself that there is any hypertrophy of the bones of the limb.

No fullness or swelling of any kind can be detected in the groin or pelvis; there is nothing abnormal in the condition of the right nympha or labium; and there has never been any pain in the limb; nor even any injury, accident, or known cause of any kind to account for its condition.

The affected limb is markedly larger than when I first saw the patient, two years ago; and the roughness of the skin of the leg, the papulæ, and the peculiar condition of the skin on the upper surface of the toes have all come on during the last two years. The following table gives the measurements of the lower extremities:—

	Left	Right
At the ankle	8 inches	$9\frac{6}{8}$ inches
Mid leg	9 ,,	14 ,,
Below the knee	$9\frac{6}{8}$,,	$14\frac{4}{8}$,,
Above the knee	$10\frac{4}{8}$,,	$16\frac{4}{8}$,,
Left part of thigh	15 ,,	$17\frac{4}{8}$,,

The fluid obtained from the excoriation over the right tendo Achillis was milky-looking, alkaline, and contained a small coagulum. Under the microscope it showed a large number of colourless cells, rather smaller than blood corpuscles, and each containing from two to four nuclei, and some granular matter; free nuclei, granules and plasma. The coagulum consisted of a finely-fibrillated structure, holding entangled a large number of cells and nuclei. On the application of heat the fluid formed a solid coagulum.

Since the above was written, several punctures have been made with a grooved needle into the lower part of the affected leg, and from these punctures several ounces of fluid were obtained. It had a rather greenish milky appearance, was alkaline, and had a specific gravity of 1·20. Under the microscope it showed broken-up cells, granular matter, some oil globules, and some blood-corpuscles—the latter, no doubt, from the puncture. It became solid on boiling. The punctures very quickly healed up. On one occasion the vesicles on the dorsum of the toes discharged rather freely a viscid, greenish-yellow opaline fluid, alkaline, and forming, on boiling, a solid coagulum. The microscope discovered nothing but molecular matter, without any cells.

XXII.—*Case of Fatty Diarrhœa, treated by Pancreatic Extract.* By Dr. Langdon Down. *Read March* 12, 1869.

ROBERT HENSON, aged 52, was admitted into the London Hospital September 22, 1868, bringing with him a medical certificate that he was suffering from fatty diarrhœa and diabetes.

Previous History.—He is a native of Boston in Lincolnshire, where he still resides. His father and mother died at 77 and 84 years respectively. He states that he fell down a ship's hold about fifteen years since, and was laid up for eleven weeks in consequence. After recovering from the effects of this injury he says he had an attack of ague. His present illness he dates two and a half years back, and attributes it to a visit to Little Grimsby in the fen country. He thinks he took cold there, and has ever since been ill; suffering from pains in the epigastrium, passing more water than usual, and having evacuations from the bowels containing fatty matter like beeswax. He says, 'It runs from me like melted fat.' He states that he has been under the care of several medical practitioners, and that twelve months since he was an in-patient at St. Bartholomew's Hospital, under the care of Dr. Farre, from which institution he was discharged relieved, but his illness soon returned.

He brings with him specimens of yellowish fat resembling beeswax, having a strong fæcal odour.

Present Condition.—His face has a markedly yellowish-

brown colour; his tongue is clean, his pulse feeble, he complains of a feeling of languor after the least exertion, and of great depression of spirits. He is not well nourished for his size; his weight 9 st. 12 lbs.; formerly it was 11½ st. He has seven stools a day, of a semi-solid consistence, with fat either at the top or in lumps throughout the mass. The stools are of a slatey or olive tinge. He complains of flatulence and pain in the back, but there is no vomiting. Careful palpation of the abdomen fails to discover any increase of size of the pancreas, nor does palpation elicit any tenderness in any part of the abdominal region.

Examination of Urine and Fæces.—The urine amounts to 5 pints a day(at one time he states it was 7 pints per diem). It is high coloured, gives acid reaction to test-paper, does not contain any albumen, has specific gravity 1022, but only contains a slight trace of sugar. It deposits large quantities of oxalate of lime (octahedra), some dumb-bell crystals (probably uric acid), and some ordinary-shaped crystals of uric acid.

Some of the specimens of fat furnished by the patient were examined by my colleague Dr. Fenwick, my clinical assistant Dr. Woodman, and myself. It was almost entirely soluble in ether, the slight residue consisting of a mixture of partially digested animal muscular fibre, vegetable fibre, salts, &c. There were present crystals of triple phosphate tinged yellow, and some bundles of acicular crystals, probably fatty acids. It was also for the most part soluble in alcohol, and on boiling with caustic alkalies readily saponified, and when acids were added nearly the whole of it proved to be stearine. When crystallised out of absolute alcohol after solution by heat, rosettes and stars of acicular crystals were formed, and a fluid uncrystallisable residue left.

Treatment.—He was placed on the full fancy diet of the hospital with milk; stimulants of all kinds were disallowed, and this diet was unaltered throughout.

He was ordered quinine with dilute sulphuric acid. He improved slightly in his general health, but the diarrhœa with fat persisted.

On October 1, I prescribed for him 7½ grains of pancreatic extract in 7½ grains of powdered malt three times a day after each meal in mucilage.

Progress.—The improvement was very speedy and marked. The number of stools almost at once fell to two a day, and gradually gained consistence and lost all appearance of fat.

Occasionally he was without pancreatine in consequence of the dispenser having failed to give due notice of the exhaustion of his supply, and an immediate relapse was noted.

He gradually gained his spirits, and was with difficulty persuaded to remain under treatment as he was anxious to be back to his business (greengrocer). He gained in weight at the rate of 2 lbs. a week. Towards the end of November the stools were reduced to one a day.

Result.—He was discharged December 3. His countenance still yellowish, but less so than at first. No trace of fat can be discovered in the motions. The urine is normal in colour, specific gravity 1030, no deposit, slightly acid, free from any trace of sugar or albumen, and contains a few octahedral crystals of oxalate of lime. No pain in the back or sides. He weighs 11 st. 4 lbs., having increased 22 lbs. since he commenced the pancreatine. He took a supply with him and left the hospital with energy and physical power. At one time, November 5 to November 12, the increase of weight was 5½ lbs. in the week. On December 24, having reached his maximum weight, 11½ stone, I desired him to leave off all medication. I continued to have favourable reports, and on March 9 he writes: 'I am very pleased to be able to tell you that my health still continues to be about the same as when I last wrote. The weight is also the same as before—11 st. 7 lbs.

Remarks.—The case is specially interesting as confirming the physiological views of the function of the pancreatic fluid in assisting in the assimilation of the fatty matter of the food. It also controverts the statement made by Corvisart that the gastric juice would decompose the pancreatic fluid and render it inert. Some interest attaches to the coexistence of the diabetes with the fatty evacuations, a coexistence which has been noticed by several observers. How long the improvement will continue is open to speculation. The patient has promised to report periodically as to his condition.

XXIII.—*Manganese, Nickel, and Zinc in Anæmia, Chlorosis, and associated Disorders.* By William Henry Broadbent, M.D. *Read April* 9, 1869.

THE experiments to be briefly related in this communication were undertaken primarily to test an hypothesis arrived at deductively. The starting-point was found in the two postulates: 1. That there must be some relation between the substance administered and the organism, on which the effects produced depend; 2. That so far as the substance is concerned, the basis of this relation can only be its chemical properties, using this term in its widest sense. The conclusion arising out of these which constituted the hypothesis to be examined was, 'That substances closely allied chemically must have an analogous action on the system, or the diversity in their operation should be capable of explanation on chemical principles.' In other words, 'chemical groups ought to form therapeutical groups.'

No fact in therapeutics is more certain than that iron cures anæmia and chlorosis, and this metal stands at the centre of a group closely allied in chemical properties, which have to it certain well-defined relations. This group, then, furnished the conditions requisite for experiments which might support or overthrow the hypothesis.

A second object also offered itself, which a few remarks will explain. The usual interpretation of the good effects of iron in anæmia is, that it supplies a natural constituent of the blood which is deficient. This, however, if a true explanation at all (which is strenuously denied by some eminent men on grounds which need not be enumerated here), carries us back but a very short step towards a real comprehension of the mode of action of iron. To attain this the question must be answered why iron is a normal constituent of the blood. The answer is not given by simply enumerating the uses which it serves. As understood by me, iron is normally present in the blood, because of the chemical affinity between it and the organic matter of the blood-corpuscles, and it is useful in virtue of the influence which this affinity exerts on the organic processes. According to this view, then, iron does not cure anæmia, because it is a constituent of healthy blood, i. e. the two do not stand in the relation of cause and effect; but the cure of anæmia and the presence of iron in the blood are alike consequences of the affinity of iron for

organic matter, and of the influence of this affinity on organic operations. The grounds for this opinion cannot be stated here. It is enunciated somewhat dogmatically for the sake of clearness and brevity, and because it is necessary in order to explain the second and practical object of the investigation. If the mode of action of iron be that indicated, then an allied metal, having similar relations with the organic proximate principles, will have a similar effect on the organic processes; and it may be that under certain circumstances its curative influence may be even superior to that of iron. This, however, is inherently improbable; but it is not at all unlikely that by the administration together with iron of one or other of the allied metals, the action of the iron may be aided. The object, then, was to ascertain, if possible, the indications for the employment of a particular member of the group as an accessory to iron in any class of cases. Manganese and nickel stand one on one side of iron, the other on the other, as to their general chemical relations; and it seemed worthy of attention, should it be found that they exerted any favourable influence at all, to endeavour to determine what special set of symptoms associated with anæmia indicated the addition of one or other of them to iron.

Manganese.

The first point to be determined was, whether the metals of the iron group could remove anæmia. For this purpose well-marked cases of anæmia were selected, and the chloride of the particular metal substituted for chloride of iron in the mistura ferri c. quassia of the hospital pharmacopœia, i.e. it was given with a few drops of dilute muriatic acid in infusion of quassia.

Case I.—*Marked Anæmia with Amenorrhœa.*

Emma B., æt. 18, servant, came as out-patient to St. Mary's Hospital, on Oct. 14, 1867. Her place was rather hard and harassing. She had been ailing for some time; the catamenia had gradually diminished, and had been absent since August. She complained of great weakness, pain in the side and loins, and shortness of breath. The bowels were regular, her appetite very poor. No leucorrhœa. Her aspect was that of marked anæmia. She took two grains of chloride of manganese, with a grain of quinine, three times a day.

Nov. 4 (three weeks).—Looks and feels better. Nov. 21.—Still better; catamenia had appeared on the 19th. Dec. 9.—Ceased to attend, having continued to improve in appearance and in strength. The early return of the catamenial flow is worthy of note. The fact that quinine was given diminishes the value of the case.

CASE II.—*Marked Anæmia with Menorrhagia.*

Caroline W., æt. 19, servant, came under my care at St. Mary's, on Nov. 21, 1867. Ailing ten months. Symptoms—great weariness; palpitation of heart and breathlessness on any exertion; pain in head. Catamenia coming on every seven or fourteen days, and excessive in quantity. Bowels regular, appetite good. Anæmia most marked; venous murmur extremely loud.

Chloride of manganese given with dilute sulphuric acid instead of hydrochloric on account of the hæmorrhage, dose gradually increased to four grains.

Nov. 25.—Weaker, faints at times, slightly delirious at night. 28.—Better decidedly. She continued to improve with slight fluctuations, and her colour gradually returned. Dec. 5.—Aspect better; still anæmic. 12.—More colour. It was now ascertained that she was living very poorly (this she had refused to acknowledge before), and dinners were ordered for her from the St. Mary's kitchen. With this assistance the improvement was still more rapid. On Dec. 30 she felt so much better that she began to talk of taking a place again. On this account I considered it due to her to add iron to the manganese, and she ceased to attend on January 20, 1868.

In this case it appeared to me that the recovery of strength and return of colour were as rapid as could have been expected from iron. She was by no means well when I gave iron with the manganese; but it seemed likely that I should soon lose sight of her, and I thought it my duty not to deprive her altogether of the known good influence of iron, lest the improvement should be only temporary.

In a third case of severe anæmia and chlorosis with amenorrhœa, great improvement followed the administration of manganese, but twice the treatment was interrupted, and iron given, by my clinical assistant in my absence.

In another case, a very severe one, the manganese seemed

to do no good whatever, and the patient was admitted into the wards, where she recovered under the usual treatment. It is sufficient to note the failure; the details would possess no interest.

Manganese was also given to children whose condition seemed to indicate iron.

Janet P., æt. 10., Oct. 17, 1867.—Very pale and anæmic. Appetite variable; at times abdominal pain; moans at night. Mang. chloridi gr. ss., tinct. calumbæ ♏x., aq. camph. ℥ss. Gained strength; appetite improved; much better in all respects on Dec. 5, her last attendance.

Eliza E., æt. 3, Oct. 24, 1867.—Weak and pale; no appetite; has ascarides: suffering from purulent vaginal discharge for three or four days. Mang. chlorid. gr. ss, aq. ʒj. t. d., hyd. c. cret. gr. j., p. rhei, sodæ bicarb. āā. gr. ij. o. n. Nov. 11.—Nearly well.

Rosina D., æt. 6, Oct. 17, 1867.—Extremely pale; wasting; faints at times; has porrigo capitis and tendency to suppuration at every part of the body. Mang. chlorid. gr. ss., tinct. calumbæ ♏x., aq. camph. ʒij. For the porrigo poulticing and washing to remove crusts, and application of dilute red oxide of mercury ointment. Well, Nov. 21.

An older brother in similar condition recovered under the same treatment.

Nickel.

Sarah C., æt. 20, servant. Ailing for six months. For four months suffering from cough. Catamenia not right for several years and absent for five months. Anæmia extreme, and attendant symptoms severe. Venous murmur loud. A systolic aortic murmur heard. No physical signs of disease of lungs.

January 2, 1868.—Nickel chlorid. gr. ij., acid. hydrochlor. dil. ♏vj., infus. quassiæ ℥j. t. d. Improvement decided and continuous. Feb. 6.—Colour better. 27.—Venous murmur scarcely audible; no aortic murmur. Last attendance on March 12, when she considered herself well.

Sarah P., æt. 29, servant. Anæmic; catamenia scanty; leucorrhœa. Thyroid body enlarged. Jan. 20.—Nickel chlorid. gr. ij. in infus. calumb. Feb. 10.—Feels quite well. 24.—No leucorrhœa. Catamenia more abundant. Ceased to attend.

I had many of those cases which make out-patient practice so unsatisfactory, the patients discontinuing their visits

after one or two weeks. In some of these there seemed to be marked improvement, in others not. One patient gave me time to try manganese, nickel, and iron in succession, and derived no benefit from any of the three metals. The following is an outline of the case:—

Charlotte J., æt. 16, servant. Extreme anæmia with the usual symptoms. Catamenia frequent and excessive.

Dec. 12, 1867.—Chloride of manganese in 2 grain doses. She felt better for a time, but, on Jan. 2, 1868, she was still very pale, and was not quite so well. Nickel was given in infusion of quassia. Jan. 16.—Could not keep the mixture on the stomach. Catamenia now absent beyond the usual time. The nickel given in aqua anethi instead of with quassia. Up to Feb. 10, the notes were 'better,' and on this date 'much better.' Feb. 17.—Catamenia still absent; not so well. The mist ferri c. quassia now given. March 5.—Although she had been in the country she was not better. The catamenia had reappeared. She attended for a short time longer, but no improvement took place.

The administration of manganese with iron has long been practised, and, according to Pétrequin and other French writers, with great advantage; but I may mention one or two cases in which I have given nickel and iron.

Mary Ann B., æt. 22, servant. Ailing three or four years. Catamenia scanty. Markedly anæmic, and suffering from pain in the side, palpitation, and breathlessness on the slightest exertion. Venous murmur heard.

Jan. 13, 1868.—Mist. ferri c. quassia ℥j., nickel chloridi gr. j. t. d. Improvement very decided and uninterrupted. March 13.—Well.

Caroline M., æt. 17, servant. Anæmia with usual symptoms. Catamenia absent; profuse leucorrhœa. Pupils remarkably large.

May 25, 1868.—Mist. ferri lax. (i.e. sulphate of magnesia with sulphate of iron), ℥j. nickel chlorid. gr. ij. t. d. Leucorrhœa much better June 4. Improvement still greater June 15, when she ceased to attend.

Zinc.

This metal is mentioned, because I tried it under the impression that it belonged to the iron group. It failed altogether to effect any improvement, and I discovered, on referring to modern works on chemistry, that it is the centre

of a group of which magnesium and cadmium are the other members, and is not to be classed with iron.

The amount of evidence adduced is not great, but it should be remembered that the point to be examined was not whether manganese and nickel were superior or equal to iron in the treatment of anæmia, but whether these metals had any influence at all in this condition; and I am able to say distinctly that I have seen the strength improve and the colour return under their use, and this without the advantages of warmth, rest, and superior food afforded by admission into the wards of an hospital. Some of the cases I should not have thought of treating as out-patients had I not wished to employ them experimentally.

In using these metals as accessories to iron, it has seemed to me that manganese had a special influence in promoting the return of the catamenia, and nickel a special property of checking leucorrhœa. Manganese is much better borne by the stomach than nickel, and causes no disturbance when given in doses of 7 or 8 grains, beyond which I have not thought it necessary to go. Nickel usually causes vomiting, sooner or later, in doses above $2\frac{1}{2}$ or 3 grains, and sometimes 1 grain added to the mist. ferri. c. quassia of the hospital produces the effect.

Postscript.—Chromium, another member of the iron group, is now under trial. In all cases improvement has followed. It has been administered in the form of chloride with a few drops of acid in water.

XXIV. — *Case of Motor Asynergy affecting chiefly the upper Extremities.* By Edward Headlam Greenhow, M.D. *Read April* 9, 1869.

JOHN HEPP, aged 35, a German tailor, became an out-patient of the Middlesex Hospital, under my care in January 1866. He has also on several occasions been admitted into the hospital for short periods.

Previous History.—The patient said he had always been a sober, industrious man; did not smoke; had never had syphilis, but had suffered from gonorrhœa sixteen years before. He had also at one time had bleeding piles, but had long been quite cured. Five years before presenting himself at the hospital he had been laid up with

bronchitis and slight jaundice. Soon after recovering from this illness he had begun to suffer from pains in the limbs, which were only of momentary duration, but returned like 'lightning strokes' every few minutes. These pains were situated chiefly in the fleshy parts of the limbs, such as the calves, forearms, and palms of the hands; more rarely they occurred in the knees, feet, or fingers. They usually recurred at brief intervals in the same situation, during several hours, or during a whole day and night, and then disappeared for a time. Sometimes, however, he said, they moved from place to place, 'flying all over him, now here now there.' The night before coming to the hospital he had suffered during many hours from severe, frequently recurring pains in the knee, as if a knife were being driven into the part and then forcibly withdrawn. At or about the time when these pains first set in, his sight had become much impaired, so that he was obliged to make use of spectacles for working or reading, though he could see distant objects distinctly with the naked eyes.

In August 1865 he had first experienced a sensation of numbness and of pricking in the right hand. In the beginning these sensations were observed only in the third and fourth fingers, but in the course of two or three weeks the middle finger became affected in the same manner, and some weeks later the corresponding fingers of the left hand became similarly, though more slightly, affected. The patient compared these sensations to those popularly called 'pins and needles,' which arise from prolonged pressure of a limb against an unyielding surface. They commenced in the tips of the fingers and gradually crept upwards successively to the first and second joints of the fingers, to the palms, wrists, and eventually to the elbows. They reached the wrist, he believed, about three weeks after they had been fully established in the fingers, and the elbow about four or five weeks later. When first attacked by the numbness in the hands he had also felt numbness in the soles of the feet, but this sensation had been only of brief duration and had long since entirely left him.

State on Admission.—The patient was pallid, had an anxious aspect, and said that he was often depressed in spirits and had a feeling of impending illness. His memory and intellect were unimpaired and he did not suffer from either headache or vertigo. He had perfect control over both the bladder and rectum, and the sexual powers were unimpaired,

but he had occasional involuntary emissions without priapism. He felt some weakness in the legs below the knees, especially in going upstairs, so that when he had ascended one flight, if he needed to mount another, he was obliged to help himself up by laying hold of the banister. On level ground he could walk five or six miles without inordinate fatigue, but even a short walk produced pain or uneasiness in the dorsal region, inducing a feeling of weariness and a desire for rest. He said that he could not walk so well by night as by day. When made to walk briskly several times to and fro the length of the room, he did so without staggering and even walked and stood steadily with his eyes shut. He could also balance himself steadily with his feet placed toes and heels in close apposition and with his eyes shut.

He no longer used spectacles and could see very well, but both pupils were small, that of the right eye being much smaller than that of the left. He could read ordinary type with both eyes open, or with either eye separately, but he saw decidedly better with the right eye than with the left, and could read ordinary type with the right eye at a distance of ten inches, but with the left eye only at a distance of not less than sixteen inches. The same sized type appeared smaller to the left eye than to the right. With the right eye he saw near objects better than distant ones; with the left eye he saw distant objects better than near ones; but he saw even distant objects less distinctly with the left eye than with the right. When an object was held directly in front of him he saw it double, but single when it was moved towards the outer radius of either eye; the change being due of course to his then seeing the object with only one eye. If the object were held near the eyes, the two images were far apart, and in proportion as it was removed further and further off, the two images approximated until, at a distance of eight feet from the eyes, they merged into one another. This union of the two images was, however, only temporary, for if the patient continued to fix his eyes upon the object for some time, and still more if he looked at anything beyond it he again saw it double. In this latter case the left-hand image was fainter and more shadowy than the other. When the object was held near the eyes both images appeared transparent. Mr. Hulke was kind enough to examine the man's eyes at my request and reported as follows:—

'The double images seen by the patient are crossed, and

this depends on slight external strabismus of the left eye, arising from paresis of the internal rectus muscle. Both pupils are small, the right one being contracted to the size of a pin-hole. If a red glass be placed over the left eye the patient always sees a red image to the right of the white one.'

The numbness and pricking sensations in the hands and forearms remained much the same in character and situation as already described; extending from the middle, third, and fourth fingers to the inner side of the palm and along the ulnar side of the forearm to the elbow. They were most marked in the right limb, and in this had recently spread in a slighter degree to the index finger and thumb, and also to the radial side of the arm. The sense of touch was materially impaired in the right hand, for he could not distinguish his pocket-hankerchief from a piece of paper unless he saw it. He could feel a prick in any part of the palm, but if pricked in two different parts of the palm at the same moment he was still only conscious of a single prick. He could not write on account of the unsteadiness of his hand. Could grasp more firmly with the left hand than with the right.

When his right hand was laid on its back upon the table, the middle, third, and fourth fingers began to move spasmodically in a slightly oscillatory manner, and gradually became flexed inwards towards the palm. Sometimes in the course of these movements they would involuntarily extend again once or oftener, but never perfectly, and less each time until they became completely flexed. The fourth finger always began to move first, and finally became the most closely flexed upon the palm, the third and middle finger moving in succession. As these movements proceeded the palm became drawn together and wrinkled; the index finger at the same time twitching slightly and becoming very slightly flexed. This spasmodic affection was exhibited also by the left hand when placed in the same position, but less constantly and to a less extent.

Sensation was slightly impaired in the patient's lower limbs; he felt a prick more acutely in the soles than on the insteps or the calves, and more distinctly on the inside than on the outside of the legs. He complained of a feeling of stiffness in the spine, as though it were firmly pressed by a board from the upper cervical vertebræ downwards to the ninth or tenth dorsal vertebra; and likewise of a feeling of

tightness and numbness round the body between the fourth and sixth ribs, as though he were girt with a hoop. He could scarcely feel a prick in this numb region, but immediately above the fourth rib sensation was perfect. The lower border of the region of numbness was less defined and only ceased altogether at the margin of the ribs. Posteriorly the upper border of the numb region commenced abruptly about the middle of the scapula; but, as in front, its lower border was not definitely marked. The numbness and anæsthesia were obviously more marked on the right than on the left side of the trunk.

The man's general health was not much disturbed, the appetite being good, the tongue clean, and the action of the bowels regular and normal. The pulse was about 80, and of good volume and power; the breath and heart sounds were normal. The urine was free both from albumen and from sugar.

Progress of the Case.—During the three years which have elapsed since the patient came under my care, no essential change has taken place in his condition. For a short time he thought himself better for repeated blistering of the spine, but my own observation satisfied me that it produced no good results, and I therefore discontinued it. Pains of the character described have continued to recur frequently in different parts of the limbs, from the time of his first coming under observation. Thus, for example, on February 9, 1866, patient reported that during the previous week he had suffered much from shooting pains in the muscles of the outside of the right thigh, a little above the knee, and also in the muscles of the ulnar side of both forearms, and in the palm of the right hand. He said that if he touched the part in which he felt the pains coming on, the touch caused him excessive agony, but that after the pains had gone off there was no tenderness in the part where they had been. On June 7, he stated that the pains had for some days been situated chiefly in the left leg, shooting from the knee down the outside of the limb to the toes, in which latter situation they were excruciating. On August 10, he said that he had for some time been comparatively free from pain until the previous night, when he had experienced sharp pains in the fleshy part of the forearm, as if it were being pierced with knives. Each shoot of pain was accompanied by a spasmodic gasping respiration. On December 21, similar pains

had continued to recur, during a period of seventeen hours, in the flesh of the inner border of the right hand, and two days later they began in the muscles of the outside of the right thigh, and lasted for nine hours. On the following day the pains came on in the muscles of the left arm just below the insertion of the deltoid muscle. The patient again stated that the respiration was affected by the pain. During 1867 he suffered repeatedly from similar attacks of pain, but was lost sight of from October 1867 until the close of 1868. The following notes of his present state were taken on February 11, 1869:—

Present State.—His general health is good, but he is emaciated, especially about the hands and arms. His muscular strength is, however, considerable, being sufficient to enable him to resist powerful efforts to bend his fingers, wrists, and elbows. He eats and sleeps well, unless when disturbed by the pains. Tongue clean; bowels regular; pulse 86, rather small; urine normal. He has complete control over the bladder and rectum, and possesses unimpaired sexual power, his wife having recently miscarried. Can walk steadily with his eyes either open or shut, and can stand firmly with his feet close together and his eyes shut; he still, however, feels weakness in the lower limbs, and becomes unsteady in going upstairs. Can use his hands freely, but needs the help of his eyes to enable him to retain anything in his grasp, or to carry any vessel, such as a cup of water, without turning it over. He still suffers from pains in the limbs identical in character and duration with those already described. During the last few days these pains have been situated in the great trochanters and in the tips of the shoulders. Another frequent site of the pains lately has been the inside of the thighs, more especially the left, about 2½ inches above the knee. He thinks that the state of the atmosphere influences the accession of the pains, from which he is sometimes free for two or three days together.

The anæsthesia in the hands and ulnar sides of the forearms and the spasmodic movements in the fingers still continue, but these latter are less marked and more equal in the two hands. They now begin in a different order, from the middle finger of the right hand, and from the third in the left hand, the thumb also jerking whilst the fingers contract. He can feel a prick anywhere over the surface of the hands or arms, but the sensation is least acute towards

the wrist and hand, and in the ulnar side of the forearm. Tactile sensibility is impaired, as before, in both hands, but most so in the right hand; he can, however, direct it straight to any object he wishes to lay hold of. He often has pains in the palms, and less frequently in the affected fingers and in the arms. Electro-motility is unimpaired both in the hands and arms, and also in the belt of numbness round the trunk, which is perhaps somewhat diminished in extent. Sensation with reference to heat and cold is likewise unimpaired. There is no anæsthesia of the lower limbs.

The pupils of both eyes are small, that of the right eye being less than half the size of the left, and not larger than a pin-hole. The separate images of an object held in front of, and near to, the eyes, are now about 2 inches apart, the right hand image being somewhat higher than the other. The images approximate as the object is removed further from the eyes, until they blend at a distance of about 5 feet, but again become double if the patient looks beyond the object at any more distant point. In reading with one eye only, he sees best with the right eye at a distance of 20 inches, and with the left at a distance of 26 or 27 inches; the focal distance having therefore increased since he first came under observation. He can read easily with both eyes together at a distance of 2 feet, and can distinguish colours perfectly. A strong solution of atropia dropped into the right eye produced, after several hours, considerable dilatation of the pupil, but very much less than it would have done in the eye of a healthy person. On placing coloured glasses over the eyes, I found that the images are still crossed; the left image being red when a red glass is placed over the right eye, and the right image blue when a blue glass is placed over the left eye. The patient says that the right image is opaque, whilst the left image, though distinct, is transparent. The only point elicited by an ophthalmoscopic examination made by Mr. Hulke was, that the retinal arteries appeared small as compared with the corresponding veins, and that the optic discs appeared whiter than usual, which, however, probably arose from the unusually dark pigmentation of the choroid.

Treatment.—It is unnecessary to give details of the treatment of this patient, which, so far as it went, was similar to that employed for two patients of the same class whose cases I brought last session under the notice of the Society. I

have, however, attempted fewer active measures in the present instance, my experience of the results of remedial measures in this disease having been so unsatisfactory that I am disposed to endorse the opinion of Romberg that, in such cases, the busy activity of the physician only increases the sufferings of the patient. At the same time, much may be done by judicious management, and by precautions against over-exertion, to alleviate many of the symptoms, and to retard the progress of the disease, which is always slow of development, and may even not be incompatible with prolonged life. In the case now under consideration, there is certainly, in some respects, a perceptible though slight improvement in the patient's condition since I first saw him, more than three years ago.

Remarks.—Although this uncommon and interesting case does not precisely resemble those described by me in the published volume of the Society's 'Transactions' under the name of 'Motor Asynergy' (Locomotor Ataxy), it belongs, I think, obviously to the same class of cases. It has run the same very chronic course, and has been apparently as little amenable to any specific treatment. It has been characterised by the same peculiar eccentric neuralgic pains of the limbs, and although in the upper limbs the co-ordination of movement and tactile sensibility have been greatly impaired, there is no corresponding diminution of muscular strength. The anæsthesia and sense of constriction round the trunk, though not constant symptoms, are by no means uncommon in cases of Asynergy. On the other hand, the neurosis of the eyes is much more pronounced than in any similar case which has come under my observation. The spasmodic affection of the fingers is also a symptom which I have not seen in any other case; the movements differing entirely in character from the sudden and violent spasms of the lower extremities sometimes exhibited in the commoner forms of the disease. But the most remarkable and, so far as my experience goes, the unique feature of this case is that, whilst the upper extremities are affected in an unusual degree, the lower parts of the frame are very slightly implicated, insomuch that the patient retains intact, or nearly so, the power of co-ordination of movement in the lower limbs, and has perfect control over the sphincters of the bladder and rectum.

These peculiarities are doubtless due to the implication of the upper portion of the spinal cord only in the process of

degeneration, and the case is one of those on which I founded the opinion expressed on a former occasion, that the term 'Locomotor Ataxy,' commonly applied to this class of spinal diseases, is calculated to give an incorrect and one-sided view of their nature.

Report on Dr. Greenhow's *Case of Motor Asynergy.*

The patient is a small thin man, with dark hair and dingy complexion. He is well formed and intelligent. His father and mother were healthy persons, and were not blood relations. He has two brothers and three sisters; none of them have had fits or other nervous disease, except that his eldest brother has been for a time in a lunatic asylum for acute mania, from which he has quite recovered.

As noticed in Dr. Greenhow's report, he first felt the approach of the disease by experiencing a sensation as if dirt were packed under his nails, and in a fortnight from his first sensation of this sort he was unable to work, and has never been able to do any work since; the occasion of this inability being numbness of his fingers. He does not know any cause for the attack.

His general health he describes as 'first-rate:' he has a good appetite, and does not suffer from sickness or palpitation of the heart. He is very clear-headed. His memory is good. He is not liable to emotional disturbance. Sudden noises or other unexpected occurrences do not disconcert him. He says his sexual power is perfect, and that its exercise does not exhaust him or add to his pains. There is no tenderness or other morbid state of the spine, and he has not felt pain there.

His symptoms consist of—1. Pains; 2. Local anæsthesia; 3. Ocular disturbance; and 4. Some muscular wasting, as follows:—

Pains.—These attack all parts of his body below the root of the neck. He described them as like lightning, or like stabs with hot or cold weapons. They occur suddenly; he does not know when or where to expect them. They are in all parts of him within a few moments. He does not know where they are worst; they sometimes may set for a time in one part, but generally they fly about him. They wake him from his sleep, which would otherwise be good. They keep him awake for two or three hours until he falls asleep from exhaustion; when he wakes again, he finds himself

still suffering from these pains. For many months he has not had more than thirty-six to forty-eight hours of freedom from them. When pressed as to their seat of greatest severity, thinks they are worst in the hips and shoulders. They have never at any time been accompanied by swelling or tenderness of the joints. There are no spasms or contractions with the pains. Nothing that he has ever taken has brought him any relief. Neither heat nor friction does any good; no kind of weather alters them; he says he has watched this carefully, and has assured himself of it. He has, on the other hand, a conviction that acid substances, such as vinegar or apples, bring on the pains.

There is a very remarkable distribution of anæsthesia, especially on the trunk. The cutaneous sensibilities of his face, neck, and shoulders are perfect, but a state of marked anæsthesia commences at the third left and fourth right dorsal nerve, following the oblique line of distribution of the cutaneous branches of those nerves with some exactness. The sensibility of the field of the third right extends across the middle line in front for the space of an inch. This state of insensibility extends down as low as the tenth dorsal nerve on either side; then the natural sensibility of the skin is suddenly recovered, and remains good down to the ends of the lower extremities, whose sensitiveness to all forms of excitation appears quick as in healthy persons. On the other hand, the sensibility of his upper extremities is very imperfect, as numbness begins in the upper third of each arm about the lower edge of the distribution of the cervical plexus, and gradually increases towards the tips of his fingers, being by far greater in the fingers to which the ulnar nerve is distributed, and in the part of the palm to which that nerve is supplied. The numbness becomes less towards the radial side of the hand, and is least marked in the thumb. The right hand is considerably worse than the left. He cannot judge the nature of substances held between his fingers. Light touches are quite unfelt. When a touch is felt it is not delayed in transmission to any noticeable extent.

Deep sensibility is unaffected in his legs and feet; he feels the ground perfectly; and when his power of standing blindfold is tried it appears perfect, for he does not totter; and when pushed, he neither easily loses his balance, nor does he have difficulty in recovering it.

He is 'ticklish' as to the unaffected nerves of the trunk, but he is quite dull to that kind of impression from the third to the tenth dorsal nerves.

Heat.—He has about the same imperfectness of sensibility to heat as to touch. When he is blindfolded and a spoon unpleasantly warm is put on his palm, he says it is touch, not heat. If the finger-nail be roughly drawn across the palm, he says it is heat, not touch. If the heat be very great he detects it as warmth, or as pain sometimes, or sometimes as a touch. He has a better perception of cold than of heat. There is no notable delay in the transmission of the impression of heat; when he feels it at all, he feels it pretty promptly.

Muscles—wasting.—There is considerable wasting of the interossic muscles and of the thenar and hypothenar muscles, especially the latter. This wasting affects the right side more than the left. There is no soreness of the muscles on pressure.

Involuntary Contractions.—When his hands are lying flat, either prone or supine, the fingers are gradually twitched into a state of partial flexion by a series of feeble, quickly repeated, trembling contractions, which, when the hand is laid flat and prone, cause the back of it to be lifted off the table. The will can easily overcome these feeble spasms, and he can extend his fingers again; but when the influence of volition has passed off, the twitchings commence again with the same result as before. The right anconeus is constantly in a state of tremulous vibratile contraction.

Power of guidance of Muscular Action is very fair; thus, when blindfolded and required to point out with his finger spots where he is touched, he moves the finger pretty steadily to within a short distance of the spot. This is a test by which healthy persons show about the same imperfection. When his eyes are shut, he can bring his arms across so as generally to cause the fingers to meet very nearly; or he can touch any part of his face with his finger as well as the generality of people, so that there is no evidence of ataxia or asynergy. The movements of his legs are natural; he walks and turns with as much ease as ever.

The action of the ribs corresponding to the anæsthetic part of the trunk is free as natural.

The *ocular* disturbances have been exhaustively described by Dr. Greenhow, and we have nothing to add to his de-

scription, except that the left image is always transparent, the right solid; the left only slightly projects from the right.

He says that he has perfect control over his evacuations in every natural way; but that some time ago, when taking haust. gent. co. he could not prevent his motions from escaping, although there is nothing particularly liable to act as a purgative in that medicine; since then, and before then, his bowels were regular always.

Remarks.—In this case we have present a group of symptoms, which, so far as we are aware, does not coexist in any recognised disease, except that called 'locomotor ataxy.' These are principally—1. Ocular disturbance; 2. Lancinating pains in the limbs; and 3. Anæsthesia.

To complete the diagnosis (using that term as it is employed by botanists to signify the sum of characteristics) of locomotor ataxy, there are wanted some other conditions, especially—1. That loss of the faculty of muscular co-ordination, which is chosen to give the disease its present name; and 2. Some imperfection in the mechanisms for extrusion of excretions.

On the other hand, while some symptoms of locomotor ataxy are wanting, other symptoms are present which do not belong to the typical cases of that disease. Thus there is a slight wasting of the muscles of the hands, and there is a peculiar band of anæsthesia around the trunk.

Hence we must admit that the features of the case vary from the diagnosis of locomotor ataxy, both in the direction of excess and in that of deficiency.

This being so, we must enquire whether such a divergence from the written descriptions of locomotor ataxy withdraws the case from the group of cases which should be naturally associated under that name; and here we open an important question which concerns the existence of 'locomotor ataxy' as a true species. Before dealing with this question, which we shall only attempt to do so far as is necessary to determine the relations of our case, we think it worth while to remark on the inconvenience of the name, which denotes one out of the group of symptoms which make up the disease in preference to the rest. The old name 'tabes dorsalis' did not specify any particular symptom, and hence had the advantage of being applicable to any and all cases that conformed to the diagnosis of the disease only partially, yet conformed so much that they lay within its limits. Great credit is due to Dr. Duchenne, of Boulogne, for showing

that what Romberg, in his account of tabes dorsalis, called weakness in the patient who staggers under the disease, is really not muscular weakness, but inability to guide and control the muscles; but we believe that in naming the whole group of symptoms that make up tabes dorsalis by the title locomotor ataxia, he gives an unfair prominence to a symptom which is certainly far from being restricted to this disease, and which is probably sometimes absent, as in the present case, and also in at least one other that has fallen under our notice. It is easy to remark that chorea, drunkenness, and indeed many other states, are strictly locomotor ataxia; and it is certainly within our experience to have seen cases where there was marked ataxia of an obscure kind, yet which in no way corresponded to tabes dorsalis, or the so-called 'locomotor ataxy.' The four chief symptoms of tabes dorsalis—ocular disturbance, pains in the limbs, anæsthesia, and ataxia—are probably of equal importance, and they make together a striking and readily recognisable disease, one whose future can be very well determined as soon as the symptoms are recognised.

Hence we believe it is of the highest importance to retain the disease, and to admit it as a real kind. This, indeed, had long been done before the term locomotor ataxy was introduced. But we think that no preference should be given to any one symptom among the group, for this reason, that experience has shown that any of them may be absent at a time when the case can be well recognised, and its nature known and course foreseen. Perhaps this objection tells with especial force against the title locomotor ataxy, which fixes on the loss of muscular control, because this symptom is often late in its appearance. The pain is generally the first characteristic symptom, and if a name were given to the disease, which would call to mind the peculiar character of these pains, we believe that it would less frequently pass for 'rheumatism' than it does at present. The anæsthesia is also very constant, as is the remaining symptom—ocular disturbance.

Yet cases are on record in which each of these symptoms has been deficient, while the other symptoms have been present. The anæsthesia sometimes is not found. The pains may be absent. Each of these deficiencies is rare. A large majority of cases show all four symptoms, or else the disease would not be worth recognising. Now we are not aware of any proof that the symptom ataxy—i.e. loss of

muscular co-ordination—is any more really essential to the constitution of the disease than the rest; and we are quite prepared to meet with cases wherein it in its turn—like the other great symptoms—is absent. And this is the light in which Dr. Greenhow's case should, we believe, be viewed, as a case, that is, of tabes dorsalis, in which the ataxy is absent, as in other cases the anæsthesia or the pains are absent. The limitation of anæsthesia to certain parts makes the case further peculiar; but we believe that this peculiarity is not enough to exclude it from the category of tabes dorsalis.

We conclude, therefore, that the case belongs really to the class usually called locomotor ataxy, but that it is a singularly interesting aberrant example.

T. Buzzard.
W. Moxon.

XXV.—*On a Case of Sub-Glossitis.*—By Carsten Holthouse. *Read April* 9, 1869.

MICHAEL SULLIVAN, aged 31, a strong, tall, healthy-looking labourer, was admitted into the Westminster Hospital on Sunday afternoon, Dec. 20, 1868, with the above. I did not see him till next day, when the following symptoms presented themselves:—

Saliva poured from the half-open mouth of the patient, as if he were salivated by mercury; but there was no fœtor of the breath.

The tongue formed a hard solid lump, filling up the posterior part of the mouth from floor to roof, and was perfectly immovable. It was of the shape of the tongue when retracted, i. e. more or less globular, and the whole of the subglossic region was affected with a sort of solid œdema, which formed another tumour in front and below the tongue, and filled up the entire space of the floor of the mouth to a level with the free edge of the teeth of the lower jaw. A white fur or exudation covered the dental margin of the gums for a breadth of about three lines both of the upper and lower jaw.

With some difficulty, owing to the pain caused by pressure of the spatula, I was enabled to obtain a view of the soft palate and the back of the pharynx, and found them free from all inflammation and œdema. The patient's breathing

was unaffected; but he could swallow nothing but liquids; and his speech was so indistinct, that it was with great difficulty he could make himself understood; indeed it might be likened, in familiar phrase, to a person speaking with a hot potato in his mouth. There was some fulness and tenderness of the submental region, but none of the submastoid.

History.—The patient stated that while eating his dinner on Saturday the 19th, consisting of bread and cold beef, he found his tongue becoming stiff and large; he continued, however, at his work until four o'clock, when he discovered that he was unable to move it in the slightest degree, or to swallow anything solid; but he felt perfectly well, and had no pain. On the following afternoon, finding no alteration, and that he was still unable to eat, he applied at the hospital, and was at once admitted by the house surgeon.

Treatment.—The house surgeon made an incision into the submucous tissue on each side of the tongue without producing any appreciable diminution of the swelling. He also ordered warm water gargles; and beef tea and milk for his diet.

Dec. 21.—After taking the above notes of the case, I ordered a chlorate of potash gargle (gr. x. ad. ℥j.) to be used every two or three hours; but on the 23rd, there being no appreciable diminution of the symptoms, the following was prescribed: Cataplasma lini gulæ; mel. boracis pro gargarisma; quinæ disulph. gr. j., acid. sulph. dil. ♏ x., aquæ ℥j. ter die sumend.

24.—Swelling of all the parts has much subsided, and the tenderness is less. A large flow of saliva took place during the night, which has now almost ceased. The patient is able to point the tongue, and to thrust it out an inch beyond the teeth. His speech also is nearly natural, and he has eaten some solid food for the first time.

26.—All swelling has disappeared from the sublingual and submental regions; the movements of the tongue are perfect; and speech and deglutition are completely restored. Discharged well.

Remarks.—I have thought this case worth bringing before the notice of the Clinical Society, because I cannot find in any of our standard medical or surgical works any account of a similar affection. Resembling in some respects glossitis, inflammation of the salivary glands, and salivation however arising, it differed from each and all of these affections in the

following particulars: From glossitis it differed in the strict limitation of the swelling to the subglossic and submental regions, and the absence of enlargement and protrusion of the tongue, and of all symptoms of dyspnœa. From inflammation of the salivary glands it differed in the absence of tenderness, and of other signs of inflammation in the region of the parotid and submaxillary glands, in the retraction and immobility of the tongue, and in the difficulty of articulation and deglutition. From salivation generally, from whatever cause arising, it differed in nearly all the above particulars.

The history of the affection just detailed throws no light on its cause; possibly some slight breach of surface of the mucous membrane beneath the tongue may have existed, or have been produced by something in the patient's food, though he was not conscious of any such lesion, nor were there any marks indicative of it. Admitting the existence of such, the symptoms might be easily accounted for on the supposition that some septic or other matter had been introduced into the wound during his meal. As regards treatment, in an unknown disease this must necessarily be tentative. The chlorate of potash, which is so beneficial in stomatitis, and some other affections attended by an inordinate secretion of saliva, appeared here to exert little influence; but the improvement which followed the change of medicine was marked and rapid. Whether the inflammation would have come to an end as quickly under any other treatment, or under none at all, or whether the medicines last prescribed are the right ones to employ in any future similar affection, of course cannot be determined by the results of a single case; that they were the best under the circumstances of the present case, seems evident by the rapid improvement which followed their administration; and if this be admitted, we are perhaps warranted in conjecturing that had they been resorted to in the first instance, a cure even more rapid might have been effected.

XXVI. — *On Hæmoptysis as a Cause of inflammatory Processes and Phthisis, with Remarks on Treatment.*

By Herman Weber, M.D.

THE excellent paper lately read by Dr. Bäumler before this Society on 'Cases of hæmoptysis followed by inflammatory changes in the lungs,' induces me to communicate the principal features of three cases of a similar nature, and to make some remarks on the treatment of hæmoptysis.

Case I.

Summary.—A. M. P., hereditarily predisposed to epistaxis and hæmoptysis, had himself repeatedly had slight attacks of hæmoptysis without their being followed by either pyrexia or impairment of the respiratory organs; had in 1858 again an attack, at first abating by rest, but afterwards rendered very violent by dancing; several days later, severe bronchopneumonia, with pleuritis on both sides, terminating in gradual resolution and perfect recovery.

A. M. P., aged 20, a native of Sweden, belongs to a healthy family; his father, however, had before the age of 30 several attacks of hæmoptysis, and was considered consumptive, but has entirely recovered. Patient himself is of fair complexion, rather stout, has a healthy appearance, and well-formed chest; had as a child occasionally epistaxis, and at the age of five and fourteen slight attacks of hæmoptysis; has been in London since 1856, and enjoyed on the whole good health, but had several colds, with expectoration of small quantities of blood, which disappeared without medical advice. In December 1858, he began again to cough, and the expectoration was mixed with streaks of blood; there were no rhonchi to be heard, the percussion sound was everywhere normal, and there was no pyrexia; pulse 60 to 65; temperature 98° to 98·4° F. After a week's comparative rest, though he did not altogether stay at home, he was almost free from cough, and the scanty expectoration was scarcely tinged with blood when, against advice, he danced on several nights; and on December 27 he expectorated several ounces of pure blood, with a sensation as if it came from the lower part of the left side. Had an irritating cough. There was some moist rhonchus at the lower part of the left side, as well in front as on the back; but there was no dullness and no fever; pulse 70; temperature 98·2° F.

Treatment.—Absolute rest. Morphiæ acetatis gr. $\frac{1}{8}$, plumbi acetat. gr. j.ss., sacchari gr. v.; ft. pulvis j.; a powder to be taken every six hours.

Dec. 28.—Had two violent attacks of hæmoptysis; expectorated with each about 10 oz. of blood. Treatment: Ice internally, and iced milk as food.

29.—No hæmoptysis since yesterday; no cough. Pulse 85; temperature 99·6° F.

30, 9. A.M.—Sat up last evening against advice; had again violent hæmoptysis during the night; slight pain in the lower part of the left side; moderate dullness of percussion; scanty subcrepitant rhonchus; absence of respiratory murmur. Pulse 85 to 90; temperature 101° F.

9 P.M.—Pulse 90; temperature 101·3° F.

Treatment.—Omit morphia and lead. Pil. coloc. co. gr. x., ft. pilulæ ij. hac nocte sumendæ.

31.—Fresh attack of hæmoptysis last night. Bowels not moved; pain in both sides; dullness of percussion on both sides, with occasional crepitant rhonchus and bronchophony, from the basis to the spina scapulæ. Feels sick and much oppressed.

4 P.M.—Pulse 80; temperature 102·8° F.

Infus. sennæ co. ℥ij., magnes. sulphat. ʒij., ft. haustus statim sumendus.

Jan. 1, 1859.—Brought up some dark coagulated blood after violent coughing; feels much better since; bowels moved; no change in the local symptoms. Pulse 80; temperature 100·5° F.

3.—Scarcely any expectoration on the 2nd, but much irritating cough this morning. He expectorated about two ounces of very dark coagulated blood, mixed with yellow matter, consisting entirely of pus globules (white blood globules?). The dullness in the lower part of the left side extends only to the lower angle of the scapula. There is still bronchophony at the base. There is mucous rhonchus at the lower part of the front. There is now also slight dullness over the left apex, with crepitant rhonchus, and occasional friction below the clavicle. On the right side the dullness still extends from the base to the spina scapulæ on the back and rather less high in the front. There is distinct bronchophony, scarcely any rhonchus, and no friction, although the patient complains of pain. The general condition is improved. Pulse only 70 to 75; temperature scarcely reaches 100° F.

7.—Cough has almost ceased. Expectoration scanty, purulent. The dullness on the left side is further diminished, but there is pain in the left axilla on deep inspiration, and he is unable to lie on that side on account of it. The dullness over the apex is likewise less marked; more mucous rhonchus. Dullness over lower part of right side still well marked; bronchophony less distinct; scarcely any respiratory sound. Great emaciation. Night perspirations. Scarcely any fever.

Treatment.—Nitric acid in an infusion of cinchona; cod liver oil.

Feb. 12.—The pyrexia and the nocturnal perspiration ceased entirely after the end of January. The appetite is good, but he does not yet gain flesh. Has lost 28 lbs. between the middle of December and the end of January.

There is still a certain amount of cough and purulent expectoration, with occasional admixture of blood. The lower part of the right side is less resonant, and there are moist rhonchi from the spina scapulæ downwards. The upper part of the left side is almost normal, with the exception of a certain roughness in the respiratory sounds; but he still frequently has pain in the lower part of the left side, where, however, excepting some mucous rhonchus, nothing abnormal is to be heard. Sometimes he has also pain in different parts of the right side.

This condition lasted, with slight change, to the end of April. He also occasionally brought up small quantities of blood, which he always was inclined to attribute to the left side, where he still frequently had pain. On some days he had also slight fever. From the end of April to the beginning of June he was at Ventnor, where he began to gain flesh, but was not free from cough and expectoration, which was still occasionally mixed with blood, and the movements of the left arm, as well as deep inspirations, caused pain in the lower part of the left side.

He spent the summer of 1859 on a little island near Gothenburg, in Sweden, where he almost, but not altogether, lost his cough. When he returned to London in September, he had mucous rhonchus in the lower part of both sides, without dullness, and also occasional rhonchus over the left apex, but his general health was good. He then spent seven months at Malaga, in Spain, and afterwards settled at Bordeaux, where he has ever since enjoyed good health, and has become very stout.

Case II.

Summary.—F. H., æt. 28, while in apparently perfect health, was seized with hæmoptysis, without any manifest disease of the respiratory organs. The hæmoptysis recurred on several days. Six days after the first attack slight pyrexia, and signs of broncho-pneumonia of the upper part of the right lung. The fever disappeared within a fortnight, and the general health was likewise soon re-established; but the effects of the inflammatory attack of the right apex were still distinct, when, several months later, pleuritis with effusion on the same side supervened. Slow but perfect recovery, with slight flattening of the upper part of the right side.

F. H., æt. 28, is the only child of a father who died young from pneumonia. The mother is living. Had several attacks of broncho-pneumonia. Mother's brother died, to use the words of the patient, 'from hæmoptysis followed by phthisis.' Has always enjoyed good health, is stout and strongly built. On Jan. 18, 1863, he suddenly began to cough, and expectorated several tablespoonfuls of pure blood. The cough and expectoration then ceased; but the same occurrence took place once more in the evening after a walk. He then slept well, and remained free from cough until the 22nd, when he felt as if he had an ordinary cough, which, however, led to expectoration of blood, mixed with only a small quantity of puriform matter. There was some slight rhonchus in the larger bronchi, but nowhere a trace of dullness or pneumonic affection to be discovered. No pyrexia. Pulse 68; temperature 98° F.

Treatment.—Perfect rest; cold fluids; gallic acid 5 grains every 2 hours.

On the evening of the 24th, after some excitement, fresh attack of hæmoptysis. He then commenced to have pyrexia, the temperature being on the evening of the 24th 100·4°, and varying in the following week between 100·2° and 102·2° F. On the 26th, dullness, with occasional subcrepitant rhonchus and slight bronchophony, was discovered on the upper part of the right side, from the apex to the third rib, and in the supraspinal region.

Treatment.—Rest; cold milk; a pill of a grain of acetate of lead with a grain of digitalis four times a day.

Feb. 2.—The cough is much diminished. There is no more admixture of fresh blood to the scanty puriform expectoration. There is more rhonchus in the right apex, which is

still dull on percussion; there is also occasionally friction sound. He has no pain there, but he sometimes has a stitch in the lower part of the left side, where no friction sound but some mucous rhonchus is heard. No dullness on that part.

The temperature is now rarely above 99° F.; the pulse under 70.

Treatment.—Continued rest in bed, but more variety in diet without ice. Pill three times a day.

6.—The phenomena of the chest are unchanged, but he is quite free from fever. Great emaciation.

Treatment.—To leave the bed for some hours. Omit the lead and digitalis. To take a mixture of phosphoric acid with infus. aurantii, and to begin with cod liver oil.

At the end of February he went to Torquay. He then had only a slight cough, with purulent expectoration in the morning. The phenomena on the left side of the chest were quite normal, but on the right side there was still dullness and absence of breathing, from the apex to the third rib in front, and over the supraspinal region on the back, and he had occasional pain in various parts of the right side.

In the middle of May, when he returned from Torquay, where he had ridden on horseback almost every day, he had gained much flesh, and had lost the cough almost entirely, but the local phenomena over the right apex were unchanged. Towards the end of the same month, while we had cold east winds, he had again a considerable increase of cough, and pleuritis with effusion developed itself on the right side, extending from the base to the middle of the scapula on the back and to the fourth rib in front. The first symptoms of the pleuritic effusion showed themselves by pain and friction in the upper part of the right side over the second and third rib. The effusion was discovered two days later. His recovery was slow, occupying from the commencement of the attack to the complete absorption almost six weeks. He had no return of hæmoptysis during this illness.

When I examined F. H. again in the spring of 1864, the dullness over the right apex was much diminished, the respiration was rougher than on the corresponding part of the left side, and the supra- and infra-clavicular spaces were flattened, but there was no other sign of the former illness.

Case III.

Summary.—F. X., æt. 23, hereditarily predisposed to epistaxis, has himself likewise frequently suffered from it, but otherwise enjoyed good health. Had after over-exertion, while affected with bronchial catarrh, several attacks of severe hæmoptysis, followed by inflammatory symptoms in different portions of the lungs, which had scarcely disappeared when fresh hæmoptysis occurred, again followed by inflammatory processes. The inflammatory symptoms were abating, when another accession of hæmoptysis led to immediate death by suffocation.

Post-mortem Examination.—Caseous deposits of different ages in different parts of both lungs, the oldest and largest being situated in the lower part of the right lung and in the upper lobe of the left where the centres of several masses were occupied by newly-formed cavities, in one of which the last fatal hæmorrhage seems to have occurred; the bronchi were filled with fresh coagula, a large branch, however, was plugged by an old coagulum, resembling in every respect a venous thrombus.

F. X., æt. 23, belongs to a healthy family, but his mother frequently suffers from severe epistaxis, and a younger brother likewise; patient himself bled often from the nose as a boy, but enjoyed otherwise good health. After having had a slight cold for about a fortnight, he took, on November 29, 1863, a very long walk in the country, in order to shake it off; on his return he coughed up several ounces of pure blood. The most careful examination of the chest did not show any local change. There was no pyrexia. Pulse 70.

Treatment.—Rest; iced fluids; five grains of gallic acid every three hours.

Dec. 2.—The cough and expectoration of blood had entirely ceased already on November 30. He went out last night without permission, and had during the night a very violent fit of hæmoptysis, coughing up within a few hours almost a pint of pure blood; the cough then abated, but at 11 in the morning he again began to cough up a large quantity of blood. At 2 P.M. he was very anæmic; pulse 102 very small; skin cold; temperature in axilla only 97·8° F.

Treatment.—Rest; ice on the chest, and ice internally: a mixture of 5 grains of gallic acid, and 15 min. of diluted sulphuric acid every three hours.

4.—Cough much diminished, expectoration moderate, dark blood mixed with puriform matter in streaks (white blood globules?). Pulse 85; temperature 98·2° F.

5.—Complains of pain in the lower part of the right side; there is some fine moist rhonchus, and slight dullness, but no friction sound. Expectoration almost puriform, with very little red. Pulse 95; temperature 101° F.

6.—Pain and pyrexia much increased; there is now also friction in the right axilla. Morning: Pulse 108; temperature 103·2° F.; respiration 38. Evening: Pulse 115; temperature 104·2° F.; respiration 44.

7.—In addition to previous symptoms, pain in the left shoulder and slight dullness and moist rhonchus, as well in the left supra-clavicular as in the supra-spinal region; moist rhonchus is heard also in the lower part of the same side. Temperature 103·6° F. in the morning; 104·8° F. in the evening.

Treatment.—More nourishing food. ℞ Quinæ dis. gr. xij., acidi sulphur. dil. ʒij., aquæ ad ℥viij. An eighth part four times a day.

9.—The cough and fever are much diminished. The temperature does not exceed 100·5° F.; the pulse not 100.

13.—Is much stronger, coughs only little, the expectoration is almost confined to the morning, of greenish colour, purulent. In the lower part of the right side, the dullness much diminished, there is no bronchophony, only some mucous rhonchus; the phenomena over the left apex are unchanged, on the lower part of left side moist rhonchus without dullness. Pulse almost always under 90. Temperature in the morning normal; in the afternoon slightly increased, but under 100° F.

16.—General health very good, but the local phenomena scarcely changed. Cough and expectoration have almost ceased. Pulse and temperature are normal.

Treatment.—Is allowed to leave the room. No medicine, except cod liver oil.

Jan. 1, 1864.—Had yesterday morning a few streaks of blood with his expectoration, but was otherwise quite well, sat up till after midnight, in exciting conversation, though he drank only little; he then slept till the morning, when on waking he had a violent attack of hæmoptysis. The examination of the chest gave a similar result as on December 13; he was quite free from pyrexia, but much blanched and exhausted.

Treatment.—Rest, ice, and the mixture of the gallic and sulphuric acids as before.

2.—No fresh blood; very little cough and expectoration of dark blood mixed with pus.

3.—Pain in the lower part of the left side, with slight dullness and diminished respiration. Urine free from albumen. In the evening much fever. Temperature above 104° F.

Treatment.—Instead of the gallic acid mixture, that of quinine and sulphuric acid as above.

5.—The pyrexia is diminished. Temperature 100° to 103° F. There is not much cough, and the expectoration scarcely exceeds three tablespoonfuls in the twenty-four hours, is thick and of greenish yellow colour, without red admixture. There is distinct friction in the lower part of the left side, and moist rhonchus with bronchial breathing on different places: the dullness is not perfect, but it extends on the back to the middle of the scapula, and in front to the nipple. Perspires much during the night.

14.—Cough much diminished, expectoration very moderate, yellow, purulent. There is still slight dullness of percussion over the left apex, as well in front as on the back, and the same over the lower part of the same side with bronchial respiration, and large rhonchi over both regions, while in the intermediate zone the phenomena of auscultation and percussion are normal. Over the lower part of the right side there has been but little change since last month. The noctural perspiration has almost entirely ceased, the pulse is mostly under 90, and the temperature has not reached 100° F. during the last three days.

On January 19, during a long conversation with friends he became much excited; towards the morning he was again seized with violent hæmoptysis, and died during the attack, evidently from suffocation.

Post-mortem Examination.—The mouth and nose are enveloped in bloody foam. The trachea is filled with semi-coagulated blood, extending into both divisions, but especially into the left, where it can be traced to the upper lobe of the left lung which contains in its upper portion several large masses, filbert to walnut size, of caseous substance, surrounded by grayish-red infiltration; between these hard masses there is still some permeable tissue; several of the caseous masses contain in their centres newly-formed cavities, one of which is filled with a fresh coagulum. The lower part of the upper, and the upper part of the lower

lobe, contain between the normal tissue several yellow caseous nodules, of the size of a small pea to a bean, which the notes, taken at the time, designate as soft yellow tubercles, but there were no true miliary tubercles either in this or in any other portion of the lungs. The smallest bronchi, and pulmonary vesicles of many parts of the normal tissue, are filled with blood. The inferior part of the lower lobe is firm and heavy, almost airless; it has somewhat the appearance of gray infiltration into which are imbedded some caseous masses. A large bronchus, entering this part, is filled with grayish-red coagulum, firmly adherent to the thickened wall, and softened in the centre, exactly like an old thrombus in a vein. The upper and middle lobe of the right lung are almost normal, but they contain several small caseous masses, surrounded by grayish-red infiltration, and, besides, the smallest bronchi and air-vesicles are filled on several places with fresh blood. The lower lobe of this lung is everywhere adherent, it is heavy, and is occupied almost entirely by hard gray infiltrated tissue, in which are contained several yellow caseous masses, two of which show central softening; there is, however, a remnant of permeable tissue between the hard masses. The heart is soft and fatty, the liver nutmeg, the kidneys somewhat congested, the spleen rather enlarged and hard.

These three cases coincide with those related by Dr. Bäumler in this important peculiarity, that the lungs did not exhibit on examination any signs of organic disease at the time that the first hæmorrhage occurred, and that it was not until several days afterwards that symptoms of inflammatory processes of the respiratory organs manifested themselves, accompanied by a corresponding elevation of temperature. These processes were principally pneumonic, but there was also a considerable addition of pleuritis and of bronchial irritation. The pneumonic affection differed from typical croupous or lobar pneumonia in the irregularity of its course, in its protracted duration, and in its being scattered over different parts of both lungs, instead of involving the whole of one lobe. In all these respects it resembled rather lobular pneumonia. The first two cases show, as two of Dr. Bäumler's, that complete absorption and recovery can take place, though the time occupied by this process is, as just mentioned, much longer than that occupied by a common lobar pneumonia. In the second case pleuritis with effusion took place, more than four months

after the hæmorrhage, at a time when all the active symptoms of the consecutive inflammatory affection had apparently long subsided; this pleuritis occurred on the same side which had been the seat of the former inflammatory process, and I cannot help bringing the two in connection with one another, the more so, as the first sign of the pleurisy consisted in pain and friction over the second and third rib, where there was still some slight dullness from the former affection, and where probably an inflammatory nodule on the surface set up the pleuritic process which at first was local and then became more general. The case shows how distant the later effects may be from the original cause.

The third case, which at last terminated fatally, and which may be regarded as an example of a form of galloping phthisis, is still more instructive, by the result of the post-mortem examination. The first attack of hæmoptysis was followed after several days by inflammatory symptoms in the lower part of the right, and the upper part of the left lung. After about three weeks the fever had ceased, and the curative process seemed to progress satisfactorily, when, owing probably to excitement, a fresh attack of hæmoptysis occurred, which again was followed, after a few days, by an inflammatory affection in the left lower lobe. He again seemed fairly to proceed towards recovery, when after a long and excited conversation a fatal hæmorrhage occurred. The post-mortem examination showed cheesy nodules, surrounded by infiltrated tissue, with the commencement of the formation of cavities in the upper lobe of the left, and in the lower of the right lung, being of the same age, and corresponding to the inflammatory processes following the first hæmorrhage about seven weeks before death; there were further the changes of a later date in the lower lobe of the left lung, with the plugged bronchial branch, corresponding to the second hæmorrhage seventeen days before death; and there was besides the fresh blood of the fatal hæmorrhage, not only in the large bronchi, but filling also some of the smallest ramifications and groups of air-vesicles, which were felt from without as hard nodules.

I confess that at the time when these cases occurred to me, I was still preoccupied by Laennec's idea that hæmoptysis, in the generality of cases, is a sign of already existing, though perhaps latent, tuberculosis; that I was quite at a loss how to interpret them on this theory; and that I owe

the clue to them entirely to Niemeyer's lucid explanation in his lectures on consumption,* and to various conversations on the subject with my colleague, Dr. Bäumler. According to Niemeyer's view, pulmonary hæmorrhage, from whatever cause it may take place, can give rise to inflammatory processes, by blood aspired into, and remaining in the finest bronchial ramifications and air cells, acting there the part of an irritant. The inflammation set up in the surrounding district may undergo the usual retrogressive changes, and the products may be absorbed sooner or later, together with the metamorphosed blood, but it may also lead to the formation of cavities and to phthisis.†

In two of the cases related there was a great tendency to epistaxis, and we may regard the hæmoptysis as having arisen from the mucous membrane of the bronchi in a similar way as epistaxis from that of the nose. The same explanation may be applicable to the third case, but it certainly is not applicable to all the cases of hæmoptysis, for in a great many of them the hæmorrhage is probably due to various morbid conditions of the vessels of the lung tissue, in consequence of inflammatory processes in the latter. In such cases, owing to local and constitutional changes already existing, it is of course less easy to show whether an attack of hæmoptysis gives rise to fresh inflammatory processes or not; but in several patients it has been quite evident to me that fresh inflammation has been set up by the hæmorrhage, and this is probably not very rarely the case.

With all gratitude to Niemeyer I am, however, inclined to think that he goes too far, when he says, 'that most cases of hæmoptysis are followed by a more or less violent irritation of the lungs and pleura.'‡ Since my attention has been directed to this question, I have had the opportunity of carefully watching nine cases of more or less severe hæmoptysis, during at least ten days after the occurrence of

* F. von Niemeyer, 'Klinische Vorträge über die Lungenschwindsucht, mitgetheilt von Dr. Ott,' p. 48 seq. 2nd edition. 1867.

† Before Laennec's time the best observers have held the Hippocratic view that hæmoptysis is often the cause of phthisis, and Niemeyer, to whom the merit belongs to have re-established this view, quotes a remarkable passage from F. Hoffmann on this subject: 'Verum adhuc sunt alia phthiseos initia, maximeque hæmoptysis. . . . Tum enim facile sanguis e pulmonum vasculis intra vesiculas aëreas extravasatur et stasi concepta putrescit, partes vicinas corrodit ac demum sinuositates efformat, vel in nodos et tubercula coit.'—Friderici Hoffmanni 'Opera Omnia,' t. iii. p. 285. Genevæ, 1740.

‡ Niemeyer, loc. cit. p. 51.

the hæmoptysis, and in five of them the hæmoptysis was not followed by any increase of temperature, or other sign of pleuro-pneumonia.

In conversation on this subject, I have repeatedly met with the objection that the blood remaining in the lungs after an attack of hæmoptysis could not act as a foreign irritating substance, and could therefore not give rise to inflammatory processes; but I think that this objection is entirely theoretical, and many of the post-mortem examinations performed a short time after the occurrence of severe attacks of hæmoptysis must refute them. The question can, perhaps, be decided by experiments on animals; but as yet I have not been successful. Healthy rabbits cough up the blood injected into the trachea very rapidly and completely, and exactly the same thing frequently occurs in man. Our surgical brethren may perhaps assist us in this respect by their experience on tracheotomy, during which operation blood may occasionally pass down into the bronchi, and by aspiration into the air-cells. In my limited experience lobular pneumonia has twice been the cause of death after tracheotomy, but I had no chance of a post-mortem examination.

It appears to me that not only blood but also morbid secretions of the respiratory organs themselves frequently act the part of irritants, as in various forms of bronchitis, especially those connected with whooping cough, and that the benefit derived from some remedies is due to their clearing the bronchi.

With regard to the treatment of hæmoptysis, I regard perfect rest as the most essential point, even in cases of very slight hæmoptysis, and I am convinced that in many instances, through this, more serious hæmorrhages are prevented; and, further, that even in many cases of severe hæmoptysis continued rest is alone sufficient to arrest the further effusion of blood, and that also the consecutive inflammatory changes are, to some degree, checked by it; but it ought to be continued not only till the spitting of blood has ceased, but until the thermometer has shown that the temperature has remained normal during five or six days after the cessation of the hæmoptysis. I will not enter into the value of gallic and sulphuric acids, of sedatives, of ice internally, and the restriction to iced fluids, because they are generally used; but less frequently employed, and yet of great service in some severe cases, is continued application

of ice bags to the chest, which have the additional advantage of obliging the patient to keep the same position. Another substance from which I have seen good effect in arresting severe hæmoptysis is ergot of rye in large doses, viz. from three to six drachms of the watery extract of our pharmacopœia in twenty-four hours.

The remedy, however, which I venture to mention particularly is the emetic. It is an old remedy, I do not know by whom first recommended, in hæmoptysis, but I well remember that it was highly spoken of by my excellent teacher the late Professor Nasse of Bonn. It has rather fallen into neglect, unmerited I think, not only in hæmoptysis, but also in many other pathological conditions in which it has formerly been frequently used. The fact that blood retained in the air passages can give rise to serious inflammatory conditions has induced me to employ it again in pulmonary hæmorrhage, and in four cases of obstinate hæmoptysis in which fresh accessions occurred during several days, and which were not yielding either to rest, or to the other remedies mentioned, the administration of the emetic was followed by a speedy cessation of spitting of blood; in two of these cases old coagulated blood mixed with purulent matter (cruor with altered white globules?) was coughed up between and after the acts of vomiting, and in none of these cases any marked inflammatory symptoms followed. The beneficial action of the emetic in many cases of bronchitis, especially bronchitis with whooping cough, offers some analogy; as the retention of purulent matter in the capillary bronchi, as already alluded to, likewise seems to be a source of irritation; and there is perhaps no remedy by which the smaller divisions of the bronchi are more effectually cleared than by the emetic. I do, however, not mean to say that this mechanical effect is the only action of the emetic; I believe it to be much more complex, and to depend partly also on the nature of the emetic remedies employed. This point I will not venture to discuss, but confine myself to stating that I usually combine ipecacuanha and antimony.

In cases where there is a tendency to hæmoptysis, climate is of great importance, and I am in the habit of recommending prolonged residence in alpine climates. I know that it is the general belief that elevated regions and rarefied air cause a disposition to hæmorrhage; but this idea is based partly on theoretical reasoning, partly on the misinterpreted descriptions of the great ascents of Humboldt, Boussingault,

and others who were, under circumstances totally different from those of the invalid, residing in a moderately high elevation. On the coast of Peru, where hæmoptysis is one of the most frequent affections, and the usual forerunner of consumption, the removal of the patient to the Andine valleys, especially the valley of Jauja, elevated between 10,000 and 11,000 feet above sea level, is, according to the testimony of Archibald Smith,* regarded as an almost certain cure. Among all the patients whom I have advised to stay at high elevations (in various parts of Switzerland, especially at St. Moritz, Pontresina, and Samaden in the Engadine, and at Davos am Platz, as also on the Cordilleras of South America) there is, to my knowledge, only one who had an attack of hæmoptysis while on high ground, although there are amongst them ten who had previously suffered from severe, and mostly from repeated attacks of hæmoptysis. I will not enter on the complicated modus operandi of high climates, but I may mention that the nutrition in general is improved by them, and that they seem besides to counteract, as I shall endeavour to show at another place, the tendency to catarrhal or lobular pneumonia and its consequences; infiltration, caseous transformation, rapid breaking down of tissue, and formation of cavities, processes by which the corrosion of blood-vessels and the development of aneurismatic conditions of the minute arteries are favoured.

I recommend alpine climates, however, not only as a prophylactic measure, against hæmoptysis, but also as a means to promote the cure of the effects of the inflammatory processes resulting from pulmonary hæmorrhage.

To facilitate the discussion, I will sum up the main points to which I wish to direct attention:—

1. That more or less violent hæmoptysis can occur without the existence of any disease of the lung tissue, from congestion of the mucous membrane of the bronchi.

2. That in many cases the hæmoptysis passes off without leading to any inflammatory changes in the lungs, or to any constitutional disturbance.

3. That in other cases, however, the retention of effused blood within the lungs gives rise to inflammatory symptoms,

* Practical Observations on the Diseases of Peru, 'Edinburgh Med. and Surg. Journal,' No. 144; and Climate of the Swiss Alps and of the Peruvian Andes Compared, by Archibald Smith, M.D. ('Dublin Quarterly Journal of Medical Sciences,' May 1866.)

especially broncho-pneumonia, mostly lobular, from irritation.

4. That the products of this inflammation may be readily absorbed under favourable circumstances, while in other cases they may form the origin of a consumptive process, i.e. subacute or chronic phthisis.

5. That pulmonary hæmorrhages, occurring in already diseased lungs, may likewise, but do likewise not always, give rise to fresh inflammatory processes.

6. That with regard to treatment, perfect rest is the most important element, and in many cases sufficient.

7. That, however, in others especially, if the hæmoptysis does not soon cease, and remedies like gallic acid and ergotin do not succeed, and fresh attacks follow one another, the emetic is a remedy of great value, as well in arresting the hæmorrhage, as also in clearing the bronchi from effused blood, and thus preventing inflammatory processes.

8. That in the treatment as well of the tendency to hæmoptysis, as also of the effects of the latter, the alpine climates deserve the more general attention of the profession.

XXVII.—*Case of Syphilis.* By Holmes Coote. *Read April* 23, 1869.

ABOUT twenty years since a medical man, æt. 48, perceived a few red streaks on the inner surface of right arm, attended with pain and swelling of the lymphatic glands of elbow and axilla. There was a trifling excoriation on the middle finger of the right hand. This soon healed, and all appearance of inflammation passed away, but the general health did not continue good. There was lassitude, diminished energy, and unwillingness to work, every little effort appearing a trouble. In about three months after the healing of the sore, the body became covered, particularly the abdomen, with a coppery coloured eruption, of a decidedly syphilitic character. The puzzle now was to account for this, and the only probable suspicious cause was that of attending a kept mistress in her confinement (whose infant died from syphilitic cachexy), and who probably from the dissolute habits of her protector might have had primary sores.

The treatment at first was mercurial: pil. hydr. and hydr. bichlor. in decoct. sarsæ, carried to the extent of making the gums tender, and this plan was continued for some weeks: afterwards potass. iodid. in decoct. sarsæ was given for several months. All appeared to go on well, and to continue so till the following year, when the health again gave way, the first indication being swelling of the lymphatic glands of elbow, axilla, neck, groin, and popliteal space, and probably internally as well, and followed at different times by various forms of eruptions of pustular and rupial form, succeeded by ulceration troublesome to heal, and when healed generally breaking out again in the course of a few months notwithstanding treatment. A node formed on the right tibia with intense paroxysmal pain, generally coming on about six o'clock in the evening, lasting about an hour, continuing for some weeks, and finally leaving suddenly, after an intense paroxysm of some hours' duration.

Years passed on, but not one passed away without some form or other of cutaneous eruption, generally commencing with thickening of the lobe of the right ear; indeed during the repeated attacks, the tendency has been for some part of the right side of the body to be more affected than the left, with the exception, perhaps, of mollusca and milasma, which were pretty equally distributed about both sides of the neck. At one time the form of eruption was that of eczema, and principally on the pubes.

In the early part of the summer of 1867 a small tumour, about the size of a pea, of a yellowish appearance, was discovered on the right side of the scrotum, and gradually enlarging to the size of a hazel nut. In September sloughing took place, the central portion becoming enucleated, leaving a foul ulcer, with hard irregular edges. This was followed in a similar manner by one on the right side of the penis, two on the right side of the neck, and three on the scalp, also on the right side, and these ulcers did not entirely heal till the April of the following year. The acid. carbolic. c. glycerin. appeared to have a good effect.

At the present time (September 1868), with the exception of a suspicious appearance on the scalp above the right ear, the body is very free, and the general health fair. During these various and repeated attacks, the throat, nose, larynx, eye, and testicle, have not been visited. With these exceptions, but few secondary or tertiary symptoms have failed 'to put in an appearance.'

To bring up this slight sketch to the end of March 1869, it may be stated that the general health is at present good, and has continued so for some months; indeed, with the exception of occasional attacks of sciatica, and making allowance for advancing age, really better than for some years past.

The case here related possesses a greater share of interest than usual, inasmuch as it is the personal record of symptoms experienced by a member of our own profession.

The points which it illustrates seem to me at direct variance with several of the popular and prevailing hypotheses respecting syphilitic disease, but in complete harmony with the experience of an hospital.

In the first place a 'non-indurated' sore, so slight that the patient scarcely noticed it, or, more properly, a simple abrasion, is followed by the usual train of constitutional symptoms. Say that in this case the evidence on this particular point is incomplete, I can produce two other cases also having occurred in the persons of medical men, where the primary affection was a simple abrasion, and nothing more.

The statement made by some authors, that there may be a transient ephemeral induration, recognisable only by the most experienced touch, is an amazing assertion, and, in my opinion, wholly unworthy of serious notice.

In the next place, the case shows that under favourable circumstances secondary or constitutional symptoms are directly contagious. The dry patch of cutaneous syphilitic lepra is not contagious, because of its want of moisture. But when the patch is moist, as on the lips or tongue, or on the glans penis or the entrance of the vagina, its contact produces an ulcer, almost invariably followed by constitutional affections.

Some surgeons have affirmed that this inoculation from a patch of lepra produces a 'primary' and not a 'secondary' ulcer. Surely this is a mere play on words. The fact to be remembered is, that lepra syphilitica may be contagious.

I see no reason to change views which I have before expressed, namely, that there is but one form of syphilitic poison, and that varieties in the character of the sore depend mainly on the structure of the tissues affected, influenced, of course, by the habits, constitution, and general condition of the patient.

The introduction of the poison into the system is effected only by the agency of the absorbents, and the period of general

infection is attended with feelings of languor and lassitude. The average duration of a well marked case, the symptoms pursuing their full course, is about three years.

But when the primary seat of disease is the hand, or, indeed, any other part than the organs of generation, such primary sore is the more difficult to heal, and the constitutional symptoms often extend over a longer period.

In the case here related a remarkable point consisted in the fact that one side of the head and face was selected in preference to the other, and that the ulcers seemed to follow the course of nerves.

I believe that many cases of syphilitic ulcers on the lips of young girls, which have been attributed to disgusting habits, are simply instances in which the infection has been communicated by the medium of a patch of syphilitic lepra on the tongue or lips of another.

Although I am sparing in the use of mercury, I yet believe it a remedy which cannot be quite discarded.

XXVIII.—*A Case illustrative of the Identity of the Syphilitic Virus in the hard and soft Chancre, with Remarks.* By A. Myers. *Read April* 23, 1869.

A RECENTLY published work on syphilis having again drawn the attention of the profession to the oft-disputed point of the unity or duality of the virus, and the author having laid down several rules for guidance in the diagnosis of the two great divisions of chancre, I trust I may be excused for bringing the question to the notice of this Society, by reporting a typical case, that has recently been under my care, in support of the opposition theory—namely the unity of the virus and the intimate connection between the hard and soft sore.

John H., æt. 23, private in the Coldstream Guards (service one year), admitted into hospital December 8, 1868, with a long narrow sore of prepuce, extending about 1½ inch along margin of reflection, having an unhealthy looking surface, but superficial, with a free discharge of pus, and being devoid of any induration around its margin or beneath it. (There is a normal paraphimosis.)

The patient has never had syphilis on a previous occasion, and he has a good constitution.

He states that ten days before admission he exposed himself to contagion, and after three days had elapsed he observed a scab on the penis which he picked off, and thus gave exit to some thick yellow matter. The sore gradually extended along the margin of the prepuce until December 8, when it was first seen by me in the condition as above described, the right groin being also a little swollen and painful. Nitrate of silver was freely applied to the sore, followed by lead lotion, and a poultice to the groin.

The sore now assumed a healthier character, and never increased in size; but as it did not seem inclined to heal, the caustic was applied every third day for a period of ten days, until this effect was produced. The healing process was, however, very slow, and one corner remained open until the beginning of March; but throughout this process there was no approach to induration, and there was a free discharge of pus from its surface. The right groin glands rapidly suppurated, the abscess was lanced, and healed up in a fortnight again. The left groin glands have neither inflamed nor become indurated. On January 4, a few scattered papules appeared over the trunk, and shortly afterwards on the forehead; and as these gradually became more developed, I commenced on the 16th a mercurial course by fumigation with a scruple of subchloride of mercury every night. On February 5 I found that the gums had become sore without any beneficial effect. The spots had rather increased over the face, and had assumed more of a tubercular character. The baths were then omitted, and from that date to the present one he has been treated with the liquor hyd. perch. in moderate doses, and the eruption is at last receding.

I am well aware that such a case must be occasionally met with by all men who have much experience of syphilis; but I think that no one will deny the great diversity of opinion still extant in this country upon the subject who has read the report of the committee appointed by the Government to enquire into its pathology and treatment. The new nomenclature is also very decided in its divisions of the primary sore, and I would draw your attention to its mode of classification—viz., hard chancre, soft chancre, phagedenic, sloughing, indurated bubo, suppurating bubo, implying, I take it, that the bubo accompanying the hard chancre is

invariably indurated, whereas the other suppurates. Now I have frequently seen a hard chancre followed by a suppurating bubo.

During the last eleven years I have had very favourable opportunities for the study of this disease in civil and military life, and I certainly think there can be no better field for this purpose than a regimental hospital, where the course of the primary sore is often watched from its commencement, as well as the after effects upon the constitution, until health is completely re-established, or so broken down (as must occasionally happen), as to render the patient no longer capable of performing the duties of a soldier. The following are some of the conclusions to which this experience has led me.

That whatever the variety of specific sore, such as soft, hard, phagedenic, and sloughing, there is but one true syphilitic virus, which in one person will take on one action, and in another, another; this being to a great extent dependent upon the constitution and cleanliness of the individual, as well as the locality of the sore.

That there is besides these a simple ulcer found occasionally on the genitals I have no doubt, but totally unconnected with syphilis, and I would attribute its origin in the male to the application of any unhealthy, irritating discharge from the uterus or vagina in the female to some part of the penis that may have been abraded at the time of, or by, coition. I have seen in some soldiers the accumulated secretion from the glandulæ odoriferæ alone produce an unhealthy looking ulceration; and, on the other hand, I have examined carefully on a few occasions women who have been suspected of having given the disease to male patients under my care owing to the presence of these simple ulcers, and I could not detect any sores upon their genitals.

As regards the induration of the true chancre, cases constantly come before me which, on the admission of the patient into hospital have been soft, and become hard at any period during the process of healing.

I most cordially agree with the opinions of Mr. Lane and Mr. James Lane, as expressed by them before the Commissioners above referred to—viz.,

That the soft chancre is the proper type of the syphilitic sore, and that the others are deviations from it.

That the primary sore is at first a local affection, and that the constitutional effect depends upon the continual absorption of its poisonous matter, and that this absorption is more likely to occur when the sore takes on an action which

incites a deposition of lymph around it, than when by a free suppuration from its surface the poison is being constantly removed.

XXIX. — *Case of Diabetes treated by large Doses of Opium.* By J. Burdon Sanderson, M.D. *Read May* 14, 1869.

G. N., aged 22, coachbuilder, was admitted into the Middlesex Hospital under my care on February 8 affected with diabetes.

Personal antecedents.—During his childhood he suffered from no ailment of importance. In infancy he was for a short time under medical treatment for 'weakness,' but soon regained his health. He had measles and some other infantile diseases, but recovered easily, and in his boyhood was vigorous, and able at an early age to carry heavy goods and work long hours as a porter. He began to work at his present trade in 1865, since which time he has lived well, and has been in the daily habit of taking a considerable quantity of malt liquor. He stated that he has always been fond of sweet things, and attributes his illness to this propensity. There is evidence that he has been addicted during the last three years to venereal excesses. He has suffered from gonorrhœa, but has not had syphilis.

Family history.—His father is at present healthy, but suffered in youth from necrosis of both radii, and an uncle died of phthisis. Both paternal grandparents were healthy. His mother died of bronchitis. Her parents lived to a considerable age, and most of her twelve brothers and sisters are living and in good health.

History of present Illness.—The patient began to complain of weakness and incapacity for exertion during the summer of 1868. In October he began to get thinner, and to suffer from listlessness and breathlessness. His appetite, which before was remarkably good, became excessive, and in particular he acquired a craving for a diet much more varied than that which is usually enjoyed by persons in his position. His daily quantity of malt liquor was three pints of pale ale, in addition to which he drank a large quantity of water. Three or four weeks before his admission into the hospital, it was for the first time observed that he was pass-

ing an unusual quantity of urine. About the same time his muscular weakness became so great that he took to his bed. During the last week that he remained at home, he was from time to time incoherent in his conversation, and referred to imaginary objects.

State on Admission.—The patient is a feeble-looking, beardless youth, several years younger in appearance than in reality; of somewhat more than average intelligence. He weighs 6 st. 5 lbs. He complains only of weakness and breathlessness. He sleeps well and has a good appetite. Breathing regular; pulse 80; respirations 16; temperature 97·8° F.; urine acid, saccharine, sp. gr. 1040.

He was ordered on admission a mixture containing 15 minims of dilute hydrochloric acid with tincture of cinchona.

Feb. 11.—During the 48 hours ending at 6 o'clock the previous evening, 148 oz. of urine were passed of natural specific gravity (viz. 1020), containing no sugar.

12.—63 oz. of urine passed in 24 hours ending 6 P.M. on the 11th. Sp. gr. 1042. Saccharine reaction obvious.

16.—From the 12th to the 16th the patient continued in the same state, passing about 90 oz. of saccharine urine daily. On the 14th all treatment was discontinued, the diet being as follows: Breakfast, tea and bran biscuits; dinner, meat and bran biscuits; tea, tea and bran biscuits; supper, beef tea.

23.—On the 18th the bowels, which were before somewhat confined, became relaxed. The diarrhœa being still troublesome, he was ordered to take the aromatic chalk powder with opium after each loose motion.

25.—The bowels being still relaxed, a mixture consisting of equal parts of decoction of logwood and lime-water was ordered.

28.—Diarrhœa has entirely ceased. The patient's appetite being excellent, he was ordered 12 oz. of meat daily with greens for dinner, besides cold meat for supper, and two eggs for breakfast, with bran biscuits *ad libitum*.

March 8.—The patient has been improving in health, strength, and weight. He was ordered to take one grain of opium every night. Up to the present time he has taken no medicine.

13.—He was ordered a grain of opium night and morning.

22.—The daily quantity was increased to 3 grains, to be taken severally at 8 A.M., 2 P.M., and 8 P.M.

28.—Daily quantity increased to 4 grs.

31.—Daily quantity increased to 5 grs.

April 9.—Daily quantity 6 grs.
16.—Daily quantity 9 grs.
23.—Daily quantity 12 grs.
May 10.—Daily quantity 15 grs.

During the whole period observations were made as to the condition of the urine.

The quantity passed during a period of 24 hours ending at 6 P.M. of each day was measured and recorded daily, and for the greater part of the time that he was under observation (including a period of ten days preceding the commencement of the treatment by opium) the quantity of sugar was determined. The method of analysis employed was that of Fehling. In a number of cases the proportion of sugar in the urine was also determined by the optical method, the results of which were found to agree closely with those obtained volumetrically.

The results were as follows:—

Preliminary observation during a period of ten days preceding commencement of treatment: diet restricted in its nature, but abundant in quantity; no medicine; general health good.

Average daily discharge of urine	64·6 oz.
Mean percentage	6·0
Daily quantity of sugar	1700 grs.

Period of 18 days after commencement of treatment (March 14-31):—

Average daily discharge of urine	75 oz.
Mean percentage of sugar	5·9
Daily quantity of sugar	1950 grs.

Week ending April 25 (9 grs. of opium daily):—

Average daily discharge	49·5 oz.
Mean percentage of sugar	6·26
Daily quantity of sugar	1360 grs.

Week ending May 2 (12 grs. of opium daily):—

Average daily discharge	38·4 oz.
Mean percentage of sugar	6·3
Daily quantity of sugar	1062 grs.

Week ending May 9:—

Average daily discharge	43·0 oz.
Mean percentage of sugar	6·0
Daily quantity of sugar	1128 grs.*

* After this paper was communicated to the Society, the patient remained under observation for several months. The daily quantity of opium was increased to 24 grains, which was continued from May 20 till the beginning of August, at which

XXX.—*On the Action of a New Organic Base, Apomorphia.* By Samuel Gee, M.D. *Read May* 14, 1869.

LAST month Dr. Matthiessen and Mr. C. R. A. Wright, while pursuing their experiments in the laboratory of St. Bartholomew's Hospital, discovered a new organic base, the action of which upon the living body forms the subject of the present communication to the Society. I should have been glad to have postponed the publication of our experiments until they were more numerous, but reasons which seemed quite sufficient determined me to bring the new base under the notice of the Society as soon as possible.

It is proposed to name the alkaloid apomorphia. Its chemistry is fully described in a paper which Dr. Matthiessen and Mr. Wright have sent in to the Royal Society. A few particulars will serve in this place. Apomorphia is prepared by the prolonged action of strong hydrochloric acid upon the chloride of morphia at a high temperature. Chloride of apomorphia is the result, from which the base itself may be easily separated; but in consequence of the instability of the base, all our experiments have been made with the chloride. Apomorphia differs from morphia as to composition by the elements of a molecule of water, thus:—

$$\text{Apomorphia} = C_{17}H_{17}NO_2$$
$$\text{Morphia} = C_{17}H_{19}NO_3$$

Chloride of apomorphia is a white crystalline powder, soluble in about thirty parts of cold water, much more soluble in warm water. A watery solution exposed to the air for some time undergoes change, probably in consequence of the absorption of oxygen; at any rate, morphia is not reproduced. Caustic alkalies throw down the base in the form of a white precipitate soluble in excess, the resulting solution speedily turns black.

We wish to record our thanks to Messrs. McFarlane of Edinburgh for the gratuitous supply of a large quantity of morphia, a gift which at the present high price of opium was very acceptable.

time the patient was transferred to Guy's Hospital, but it was impossible to go on with the analyses after June 23. The patient made further progress in strength, weight, and appetite, and the daily quantity of urine underwent a further reduction although the percentage was scarcely altered. The mean results of the daily measurements and of seventeen analyses made during the five weeks ending June 23 are as follows: Daily discharge of urine 25·5 oz., mean percentage of sugar 6·25.

To come to the physiological properties of apomorphia. After a few preliminary experiments upon a dog, $\frac{1}{5}$ grain was swallowed by a man in good health. In twenty minutes he felt dizzy and depressed, with an uncomfortable sensation in the head, very qualmish, not the least somnolent; he then became very pale, and salivated; five-and-twenty minutes after the dose he vomited freely; after vomiting twice felt much relieved, drank half a glass of wine, and in half an hour regained his usual condition.

The next experiment was a subcutaneous injection. We had previously ascertained that the chloride of apomorphia was not locally irritant in the least degree. Numerous subcutaneous injections in a dog, the powder puffed into his eye, an inunction made upon the thin skin of the arm, were quite without local effect. A healthy young man was injected with $\frac{1}{10}$ of a grain into his arm. In about three minutes he began to feel uncomfortable in his head, in five minutes he was much depressed, in seven minutes he looked very pale and low, his pulse became infrequent and rather weak, he sweated; in ten minutes from the injection he vomited thrice; after a little brandy the vomiting ceased, and he recovered in about half an hour.

A gentleman who was working with the new base and who had his hands sometimes wetted with the solutions, frequently vomited three or four times in the evening; besides this, he was, at times, depressed, uncomfortable in the head, and unfit for work.

We have not observed any action upon the bowels.

These experiments suffice to indicate the remarkable emetic powers possessed by apomorphia. It offers these advantages:—

I. The smallness of the dose. As much can be raised by the tip of the little finger as will cause vomiting when taken by the mouth; $\frac{1}{10}$ grain injected subcutaneously will produce the same effect in from four to ten minutes. I need not stay to compare this with the bulky doses required of most emetics.

II. The total absence of all local irritant properties. Hence apomorphia can be injected subcutaneously, and is, I believe I am right in saying, the only emetic which can be so used.

III. The certainty of its action. The number of our experiments truly is small at present, but so far we have never yet failed to produce vomiting when we wished to do so, and

by a single dose. The uncertainty of most emetics is proverbial.

IV. The transitoriness of its action. The vomiting in most cases seems to be critical as it were and put an end to itself; there is no subsequent nausea.

Upon this point let me refer to some cases for which I am indebted to my friend Dr. Hensley of St. Bartholomew's. A man was brought drunk to the hospital by the police, injected with the $\frac{1}{10}$ grain he vomited in six minutes. Another drunken man injected with $\frac{1}{5}$ grain vomited in three minutes. A drunken woman injected with the $\frac{1}{10}$ grain vomited in three minutes. We may safely ask what other drug could have competed with apomorphia?

At present I am not able to say anything based upon a sufficient number of experiments as to the other properties of apomorphia.

Once or twice, when it has been used as an emetic, there has been an amount of depression both of the circulation and of the general muscular powers beyond what could be accounted for by the vomiting. I do not mean that the depression produced by the injection of the $\frac{1}{10}$ grain has ever caused the least anxiety. So that the question arises whether apomorphia, when given in larger or more frequent doses, is a contra-stimulant similar to blood-letting, antimony and veratria. A boy of nine was brought to the hospital in a state of excitement which quite deserved the name of mania. The cause was undiscoverable; he had been left alone in a house for some time and was found by his friends in the maniacal state. His pupils were widely dilated and insensible to light. Dr. Hensley injected the $\frac{1}{10}$ grain; in four minutes the boy became quite quiet, in seven minutes he vomited freely; advantage was taken of his tranquillity to put him to bed, where he slept soundly, and awoke next morning quite well.

Apomorphia injected in large doses into the lower animals produces grave symptoms referable to the nervous system. Two grains were injected into a dog; he vomited, and in two or three minutes began to course round the large room in which the experiment was performed in a curiously persistent methodical manner. He recovered completely. Three grains injected into a cat produced more excitement, her running about was frequently interrupted by high leaping into the air and turning summersaults; her pupils were dilated to the extreme and insensible. Two more grains

produced epileptiform convulsions. Two more grains were injected—making seven in all; the convulsions were followed by perfect relaxation, the heart beat pretty forcibly; she was found dead the next morning. All the organs were perfectly natural; no hyperæmia of any of them. Only once have we observed anything similar in the human subject. A man who was under the care of Dr. Farre, and for chronic morbus Brightii, be it remembered, had on each of two days taken the emetic draught of the hospital pharmacopœia without effect. A day or two afterwards, by Dr. Farre's leave, he was injected with the $\frac{1}{10}$ grain of apomorphia. In four minutes he vomited freely. The vomiting continued at intervals for half an hour; he then passed into a mildly delirious state for half an hour, after which he went to sleep for an hour; when he awoke he felt, according to his own account, better than before the injection.

We have tried other experiments, one especially which seemed to show that apomorphia in large doses was counteractive of the tetanic state, but at present I will say no more.

XXXI.—*Case of Displacement of the Trachea from external Pressure.* By Morell Mackenzie, M.D. *Read May* 28, 1869.

JAMES W., aged 53, came under my care at the London Hospital, March 13, 1869, on account of shortness of breath, which had been coming on for years, but which had been much worse during the last six months. The patient is a short, strong, squareset, muscular-looking man of healthy appearance and temperate habits. On examining him, the following appearances were found:—

There was considerable general fullness at the root of the neck, the circumference of which measured seventeen inches. The jugular and other superficial veins at the lower part of the neck were dilated, turgid, and tortuous, and there was increased arterial impulse near the angle of junction of the right carotid and subclavian arteries.

The manubrium sterin seemed to be partially separated from the rest of the sternum, and pushed forward so that its lower edge projected for half an inch. The lower part of the pomum Adami was slightly to the right side of the median line, and nearly the whole of the cricoid cartilage

was entirely to the right side, behind the right sterno-clavicle mastoideus and sterno-thyroid muscles. Dullness on percussion was found extending from the centre of the manubrium outwards for three inches on each side, over the inner half of the supra clavicular space, and over the whole of the manubrium from above downwards.

On auscultation, the heart sounds were found to be healthy, but rather feeble, especially the second sound. No aneurismal bruit could be detected, but a loud venous murmur was heard at times over the centre of the sternum. The vesicular murmur of both lungs was feeble throughout, and the sound over the large bronchial tubes was abnormally high-pitched.

The patient suffers from stridor on the slightest exertion, and complains of a catch in his breath just below the cricoid cartilage. He states that he requires to keep his head rather high in sleeping; sleeps soundly, though restlessly, and makes considerable noise in breathing when asleep. A laryngoscopic examination showed some distortion of the larynx, the left vocal cord being in the centre of the field of vision, and the right being barely perceptible on the right side.

As regards the general health and history of the patient, it need only be remarked that he seems very well, and that all his functions, including deglutition, are in a normal condition. His pulse is 72.

His father died of heart disease, but there is nothing else of any importance in the family history. He states that as a boy he lived for some time at Bakewell in Derbyshire, and that he formerly suffered from a Derbyshire neck. He had at that time a tumour at the lower part of the neck about the size of a bantam's egg. Two years ago he was under Dr. Church's care at the Victoria Park Hospital, and a swelling which he then had at the lower part of the neck was reduced four inches in six weeks. His breathing, however, had been worse during the last six months than it ever was before.

The case seems to me to be one of those very rare ones in which there is a tumour in the anterior mediastinum. The growth must of course be benign.

XXXII.—*Case of Suppression of Urine very slowly fatal.*

By James Paget. *Read May* 28, 1869.

Mr. P., aged 74, a farmer in Hampshire, had always enjoyed good health till he had an attack of rheumatism, which lasted from June 24 to July 6, 1868. From this he soon recovered, and remained quite well, sturdy for his age, living liberally, and very fat, till April 23, when he observed that he passed no urine all day. In the week previous he had passed less than was usual with him, but now he passed none at all. Yet he suffered no pain or other distress, and Mr. Stevens, of Christchurch, to whom I owe the notes of the case during its first three days and its last week, found no distension of the bladder, and no disturbance of the general health.

April 24.—He remained in the same state, and passed no urine. A catheter was introduced without difficulty, but no urine came, and it was thought that it must have gone into some false passage.

25.—There was still no change. The patient ate and drank and slept as usual; he made no complaints; his bowels acted naturally. A catheter was again introduced, but nothing passed through it.

26.—He came to London, and was put under my care. He had the ordinary appearance of a very fat old farmer, and I could find nothing unhealthy in him, whether in his pulse, breathing, temperature (as tested by my hand), or his digestive functions. I could not feel a distended bladder; but he was so large and fat that one's touch might be insufficient. I passed the catheter, and could withdraw nothing.

On the following days, from April 27 to May 1, no considerable change ensued. The patient slept much, probably from ten to twelve hours in the twenty-four; but when awake there was no more dullness or defect of mind than was natural to him. He once, on the 29th, vomited about three ounces of greenish fluid with mucus. His appetite diminished but was far from lost; his bowels were torpid till, twice, they were acted on with calomel and aperients. His pulse was from 60 to 70, full and strong; his breathing free and natural. He had some pain in the left loin—as much, perhaps, as a man of keener sensibility might have thought severe. In repeated examinations, I could not feel the bladder; and the catheter found nothing in it. Saline

diuretics were repeatedly given, but they seemed to produce no effect whatever.

On May 1, the ninth day after that on which he had last passed urine, I advised him to return home, thinking that he must soon begin to die. He said that 'he was just as fit to go home as he had been to come to town;' and he travelled to the neighbourhood of Christchurch without trouble.

On the next following days to May 5, there was little if any change in his state. The bowels were made to yield on some days watery stools; but still no urine passed.

On May 5 he was more sleepy. On May 6 it was rather difficult to wake him, and in the afternoon of this day he had a slight attack of convulsions, the first notable sign of a suppression of urine which had now lasted thirteen days.

During the night of May 6–7 a considerable quantity of urine escaped from the patient while he was asleep, but it could not be measured, for it ran into and through his bed. Afterwards he passed consciously six ounces of pale albuminous urine, and some slight convulsive movements which he had had during the day ceased.

May 8.—He passed no urine, and now, for the first time, his pulse was quickened.

9.—He had slight spasmodic twitchings of the arms; his hands and feet were very cold; his pulse 84 and irregular; he disliked food. No urine was passed, and he felt no desire to pass any.

10.—He appeared sinking; felt sick, and spat some mucus tinged with blood. His pulse was 110 and intermittent. He was conscious, but had slight twitchings of his limbs.

11.—He was very drowsy. His bowels acted, but he passed no urine. His pulse was 112 and intermittent, and the twitchings continued.

From this time he gradually died; his pulse becoming more rapid and more feeble; the twitching of his limbs varying from day to day; the consciousness becoming gradually more dull; the bowels acting with dark foul excretions; no urine being at any time passed. He died on May 15, at 1 P.M., twenty-two days after the beginning of the suppression of urine.

Mr. W. Kesteven removed the urinary organs for examination.

The prostate gland was moderately enlarged, but not in a manner or degree likely to have caused any obstruction of urine.

The bladder was empty and contracted. Its muscular structure appeared healthy; its mucous membrane was congested, and in some parts ecchymosed.

The right ureter was healthy and pervious throughout. The left ureter was, in its upper part, hypertrophied, and considerably dilated. About two inches from its vesical orifice a calculus was lodged in it. Below the calculus the ureter was of normal size and structure, pervious to the bladder. The calculus could be easily pushed towards the kidney, but not towards the bladder; yet it was not so tightly lodged in the ureter but that a probe could be passed upwards by its side.

The secreting structure of the right kidney was reduced to a thin shell, studded with cysts of various sizes, the largest being about two-thirds of an inch in diameter. The pelvis, calices, and infundibula were equally dilated, and contained about half a pint of fluid having a specific gravity of 1010, slightly acid, apparently ill-formed urine, which escaped easily from the lower end of the ureter when the kidney was held up.

In the left kidney the secreting structure appeared hypertrophied and gorged with blood. It was sparsely studded with cysts. There was no appearance of dilatation of the pelvis or calices; and no urine was found in them.

Remarks.—It would, probably, be useless to discuss the cause of the almost total cessation of the secretion of urine by these kidneys. The interest and rarity of the case are in the long continuance of the suppression of urine, and in the almost complete absence of any consequent disturbance of the health during a great part of the time.

It is probable that, in such a case as this, there is, for some time, very little or no secretion of urine, and then a temporary recovery and restored secretion. Whether such variations occurred in this case, in which a certain quantity of urine being secreted might be detained in the kidneys, there are no grounds for judging; but the case is not the less remarkable if the rate of secretion were uniform. For, if we reckon at a pint the whole quantity of urine passed in the night of May 6–7, and suppose this quantity to have been gradually secreted, and retained in the dilated right kidney between April 23 and the time of its discharge, the secretion would have been at the rate of only an ounce and a half a day for a fortnight. Yet to nearly the close of this time the patient's general health was scarcely disturbed. He was

rather more sleepy than usual, and lost some of his muscular power, but he felt no discomfort, and lived nearly as he did in health. So singular a tolerance of a morbid state, which is usually attended with severe disturbance of the nervous system and sometimes of the whole economy, might be due, in part, to the patient being naturally of a strangely insensitive nature, but was, probably, much more due to his old age and the attendant slowness of the changes of nutrition in all his organs.

In the last week of life, the secretion of urine may have continued at nearly the same rate, half a pint being probably formed in eight days; but during this time the patient was dying in the manner usual in cases of suppression of urine, only more slowly.

Of the treatment adopted in this case, with sometimes purgatives, sometimes diuretics, and once large injections of water into the bowels, none appeared to produce any effect whatever on the urinary organs or the general health.

XXXIII.—*Case of Cholera treated with Saline Injection into the Veins of a lower Temperature than that of the Blood.* By Charles Murchison, M.D. *Read May* 28, 1869.

On September 17, 1866, during the last epidemic of cholera, Sophia W., aged 43, was admitted, under my care, into the Middlesex Hospital. She had suffered from severe diarrhœa for more than a week, and on the night between the 15th and 16th she had been kept awake by severe 'cramps' in her abdomen, back, and legs. About 2 A.M. of the 17th, she was seized with very severe cramps in the abdomen, and immediately afterwards she passed a large quantity of colourless watery fluid, like whey, from the bowels, and vomited a similar fluid. The purging continued incessant till 6 A.M.; but from that hour until admission there had been neither vomiting nor purging.

On admission at 11 A.M., the patient was in a state of collapse. The pulse was imperceptible at the wrist, but could be felt in the brachial and carotid arteries, where it numbered 120. The features were pinched, and the eyeballs sunken. The face and extremities were cold, clammy, and livid. The temperature in the axilla was $94\frac{3}{5}°$ F. The respirations

were 28, deep and laboured; the breath felt cold. She spoke only in a whisper, appeared indifferent to what was going on, but was withal conscious. She still suffered occasionally from severe cramps in her legs. While being undressed, she passed from her bowels a large quantity of colourless flaky liquid. She was in the seventh month of pregnancy.

The patient was at once placed for fifteen minutes in a warm bath, at a temperature of about 100° F., and on being put to bed, a large linseed and mustard poultice was applied over the abdomen; ice was given to suck freely; and a mixture, containing one drachm of sp. am. arom. and 20 minims of spirit. chlorof. in camphor water, was ordered to be taken every hour.

At first she seemed to rally slightly. Her appearance improved, and she expressed herself as feeling better. The temperature in the axilla rose to 97° F., and the whole body felt warmer. The pulse, however, did not return to the radial artery, and the improvement noted scarcely lasted half an hour. After this, she began again to pass colourless watery motions from the bowels, she vomited occasionally a similar fluid, and now and then had severe cramps in the legs.

At 4.30 P.M., the collapse had greatly increased. The pulse was no longer perceptible in the brachial arteries, and could scarcely be felt in the carotids. The respirations were 48, and very embarrassed. The eyeballs and cheeks were deeply sunk, and the face and extremities were livid. The whole body was bathed in perspiration, but felt very cold. The temperature in the axilla was 96⅘°, but in the anus it was as high as 100⅕° F. The vomiting and purging had ceased; since 1.15 P.M., there had been no vomiting, and only one scanty watery motion. No urine had been passed, and the bladder seemed empty.

My colleague, Mr. Moore, now at my request injected into the right brachial vein 40 ounces of a saline solution, composed as follows: Chloride of sodium 90 grains, chloride of potassium 30 grains, phosphate of soda 10 grains, carbonate of soda 5 grains, distilled water 40 fluid ounces. The temperature of the solution when prepared was 100° F.; but no measures were taken to keep up this temperature during the three-quarters of an hour that the operation lasted, nor was the large brass syringe employed heated. The temperature, therefore, of the first fluid that entered the patient's circulation must have been below what was ascertained by the same thermometer to exist in the anus.

The operation was commenced at 4.30 P.M., and, as the injection was thrown in very slowly, it lasted till 5.15 P.M. Before 10 ounces had been injected, there was a visible improvement in the patient's condition; and by the time that one pint had been injected, the improvement was very decided. The patient expressed herself as feeling much more comfortable. Her face had filled out, and her colour was greatly improved. But, what was even more remarkable, the pulse, which, during the six hours that the patient had been in the hospital, had been imperceptible at the wrists, and which had even disappeared from the brachial arteries, could now be distinctly counted not only in the brachials, but also in both radial arteries. The respirations also had fallen from 48 to 26, and were much less embarrassed.

But this improvement was of very short duration. The injection was scarcely completed, before the patient's condition was again becoming worse, and it was discovered that the purging, which had ceased for some hours, had returned with great severity, the watery evacuation having soaked through the bedding and formed a pool upon the floor.

The purging continued to recur at intervals, and there were occasional cramps in the abdomen and legs. At 7 P.M. the collapse was even greater than before the injection; no pulse could be felt in the radial, brachial, or carotid arteries. Her mind, however, remained clear, and she was constantly calling out for food. The surface of the body also felt warmer than it had done some hours before, and the temperature in the axilla was 97° F.

At 7.30 P.M. the patient died.

Autopsy. — Nineteen hours after death. Marked post-mortem rigidity.

The minute vessels of the entire peritoneal coat of the intestines intensely injected. The coats of the bowel, but especially those of the small intestine, thickened, soft, and presenting somewhat of a gelatinous appearance. Fine punctiform injection of the mucous membrane of the bowels; the villi denuded of epithelium and presenting an opaque white appearance; no enlargement of Peyer's patches or of the solitary glands. The intestines contained about a pint of thick milky fluid depositing a copious flaky sediment composed mainly of epithelium, mostly columnar, and many of the cells united so as to form casts of the villi.

Kidneys moderately congested; right, 4 oz.; left, 5 oz. The uriniferous tubes full of granular epithelium. Bladder empty.

Spleen 10½ oz., large, diffluent, and pale.

Liver 66 oz., pale and friable; the lobules distinct, being surrounded by a slight rim of portal congestion. The trunk and large branches of the portal vein full of thick dark blood. Hepatic cells granular, but oily matter not increased.

A small quantity of thick, dark, fluid blood in both sides of the heart. The large veins leading to the right auricle contained blood of a similar character. Both lungs pale along their anterior margins, but neither of them at all collapsed, and both much congested and œdematous posteriorly; right, 22½ oz.; left, 16 oz.

Remarks.—The marvellous, though temporary, improvement produced by saline injections into the veins in the collapse of cholera has long been known, and has been constantly referred to in the discussions that have recently taken place on the pathology of collapse. According to the view that the phenomena of collapse are in no way due to the removal of fluid from the blood by vomiting and purging, but result from spasm of the minute branches of the pulmonary artery interfering with the circulation and aeration of the blood, the good effects of the injections into the veins are attributed to the warmth of the fluid employed relaxing this arterial spasm and permitting the blood to circulate. The ordinary temperature of the fluid injected has been about 110° F., and we know little of the effects of injecting fluids of a temperature corresponding to, or less than that of the blood. 'Dr. Latta at first proposed 112° F.; he subsequently reduced it to 105°, and in his later operations to 98°,'* but I have not been able to meet with an account of these later experiments. According to Twining, when used so low as 100° F. it is stated to cause rigors; and when the heat of the fluid injected is raised to 115°, it is said to produce sudden excitement of the heart, with a sensation of great weakness.† Fits of shivering and coldness, however, it may be observed, are not uncommon after the injection of fluid having a temperature as high as 110° F.‡ On the other hand, Dr. John M'Pherson, in his recent work on cholera, makes the following statement: 'Mr. Scriven, prin-

* 'Report on the Morbid Anatomy, Pathology, and Treatment of Cholera.' By W. W. Gull, M.D. 1854, p. 212.

† 'Clinical Illustrations of the more important Diseases of Bengal.' By W. Twining. 2nd ed. 1835, vol. ii. p. 169.

‡ See, for example, 'Report of Cases treated by the introduction of Fluids into the Veins.' By Mr. Little. 'London Hosp. Reports,' 1866, vol. iii. p. 462; also 'London Med. Gaz.' 1832, vol. x. p. 289.

cipal of the Medical College, Lahore, a very acute observer, assures me that he has produced this marvellous revival with injections of fluid of the normal temperature of blood.'*

In the case now detailed the temperature of the fluid by the time it was introduced into the veins was of a lower temperature than that indicated by a thermometer passed into the rectum, and yet the improvement was most manifest. It is worth observing also that the aggravation of the symptoms which subsequently occurred was preceded by profuse purging, although this had ceased for some hours before. The fluid while it remained in the blood seemed to enable this to circulate, but as it filtered away through the bowels the blood again became stagnant. This is far from being an exceptional occurrence. When death has followed saline injections of any temperature into the veins, the case has either passed into the stage of reaction, or, if the fatal event has been due to collapse, it has been preceded by an increase or a return of the purging.†

Unfortunately no opportunity offered of repeating the experiment now detailed; but, in conjunction with the similar observations of Mr. Scriven, it seems to show that the marvellous effects of saline injections into the veins in the collapse of cholera cannot be due to the fluid injected being of a higher temperature than the blood in the branches of the pulmonary artery.

XXXIV.—*Case of Gastro-Enteritis from local Irritants simulating Cholera on two Occasions in the same Individual.* By Charles Murchison, M.D. *Read May 28, 1869.*

SARAH ANN M., aged 51, was admitted into the Middlesex Hospital under my care on April 10, 1867. Seven years before, she had suffered from quotidian ague for three months, and ever since she had felt weak. On the day before admission she was in her usual health; but at 7 P.M. she was seized with severe cramps in the abdomen,

* 'Cholera in its Home,' 1866, p. 122. In reference to this matter it must be remembered that in cholera-collapse, while the surface of the body is several degrees below the normal standard of temperature, a thermometer passed into the rectum or vagina often indicates a temperature as many degrees above.

† See 'London Med. Gaz.' for 1832, passim; and Mr. Little's paper already referred to.

thighs, and calves of the legs, accompanied after two hours by violent vomiting and purging. From 9 P.M. till midnight she had six motions; and from midnight till she was brought to the hospital at 9 A.M. the bowels had acted 'about every ten minutes,' the last time being immediately before admission. The vomiting had been almost as frequent. The matter passed from the bowels before midnight was described as a dark fluid; but what was passed after this was stated by the patient's friends to be quite colourless, like rice and water.

On admission, the patient was in a condition approaching to collapse. The pulse could be counted with difficulty in the radial arteries; it numbered 72. The respirations were 18. The whole surface of the body felt cold, the temperature in the axilla being 96·8° F. The hands were livid; the eyes were sunken, and surrounded by a circle of livid discoloration. The tongue had a slight white fur and was rather dry. The patient complained of nausea and intense thirst, and still had cramps in the abdomen, legs, and feet.

The treatment consisted in external warmth by hot blankets and bottles, a draught every three hours containing liq. opii sed. ℥iv., spirit. am. aromat. ʒss., sp. chloroformi ℥xv., and peppermint water; and ice to suck.

The patient at once began to improve, and had no vomiting or purging after admission; but for thirty-six hours she passed no urine. At the end of twenty-four hours from admission, no urine could be obtained by catheter; but twelve hours afterwards 17 oz. were voided, which contained a small quantity of albumen. For two days the albumen persisted in the urine, but after this it quite disappeared. On May 7, she left the hospital weak, but otherwise well.

On July 23, at 6.45 A.M. Sarah Ann M. was readmitted a patient under my care. She had remained free from diarrhœa until the evening of July 20, when she had been again attacked by pain in abdomen, vomiting and purging. On the following day she was somewhat better and was able to eat a mutton chop. But after this the vomiting and purging continued to increase until admission, during the night preceding which the purging had been incessant. The bowels had last acted immediately before the patient's arrival at the hospital, her night dress being soaked with an almost colourless liquid evacuation.

On admission, the collapse was even greater than on the first occasion. The eyeballs were sunk and the features

pinched. The pulse could not be felt in either the radial or brachial arteries. The whole surface of the body felt cold and the face and extremities were livid. The patient was restless and constantly moaning. She complained of intense thirst and of severe cramps in the abdomen and legs. She retched, but did not bring up anything, while being put to bed.

The same treatment was resorted to as on the former occasion, and with a like result. The purging at once ceased, but for some hours there was urgent vomiting of a colourless liquid. At 1.30 P.M. the pulse could be counted in the brachial arteries, and at 9 P.M. in the radials. There were still occasional cramps in the abdomen and legs, and no urine had been voided all day. The patient passed a restless night, but next morning she was decidedly better and voided nearly a pint of urine, which contained a small, but decided, amount of albumen, and which, with the addition of nitric acid assumed a very dark hue—deep red by transmitted, but almost black by reflected, light. In the course of the day, the patient passed a bilious motion, and on July 25 the urine contained no albumen, and had lost the abnormal reaction with nitric acid just referred to. From this time she gradually gained strength, and on August 9 she was able to leave the hospital.

The patient's first attack could not at the time be traced to any error in diet, and was regarded as an attack of cholera. The second seizure, however, commenced five hours after eating American lobster preserved in tin, and on cross-examination the patient now admitted that the first attack had set in shortly after partaking of pungent decayed cheese.* It is worthy of note, however, that others had eaten with impunity both of the lobster and the cheese.

Remarks.—The circumstance that the patient was the only one to suffer of those who partook of the cheese and the lobster pointed to some peculiarity in her constitution, but was far from showing that the articles of diet referred to

* On May 21, 1862, a women aged 42, and her three sons, aged 17, 12, and 6, were admitted into the London Fever Hospital with symptoms of gastro-enteritis, with which all had been attacked about three quarters of an hour after eating decayed American cheese. The youngest boy died with symptoms of collapse on May 23. The mother, who had not previously been subject to epilepsy, had an epileptiform seizure on May 22, and three others on May 23, in the last of which she died. The two eldest boys recovered. On post-mortem examination, the mucous membrane of the stomach, in both the fatal cases, was intensely red and inflamed, and pieces of the cheese were found in the intestines, which were also at many places very red. In the female, nothing was seen in the brain to account for the convulsive fits, but the kidneys were slightly granular.

were free from blame. The chief interest, however, of the case is the analogy of the symptoms to those of cholera. Mr. Sedgwick, in an interesting essay published in the last volume of the 'Medico-Chirurgical Transactions,'* has collected abundant evidence that phenomena identical with the collapse of cholera, including suppression of urine unaccompanied by symptoms of uræmic poisoning, may be produced by mineral, animal, and vegetable poisons. In the case now detailed, not only was the collapse identical with that of cholera, but, as in cholera, the suppression of urine was on both occasions followed by temporary albuminuria. Such cases have an important bearing on the much debated question of the pathology of cholera-collapse, and I may, therefore, in conclusion, refer briefly to a somewhat similar one lately observed at the London Fever Hospital.† On August 6, 1866, during the last epidemic of cholera, a man aged sixty was admitted from a cholera district with cholera-collapse. He rallied, and on August 11, he had two formed bilious stools and appeared convalescent. At 8 P.M. of this day a hospital scrubber, unknown to the nurse, gave him two large, cold, and hard potatoes, which he ate. Between 10 and 11 P.M. the man was seized with violent vomiting and purging followed by the most characteristic cholera-collapse, which proved fatal at 6.30 A.M. next morning. After death there were the usual anatomical appearances of cholera including the presence of large fragments of potato in the intensely injected stomach and intestines. Here a relapse of true cholera seemed to result from the local irritation of uncooked and unmasticated potato.

XXXV.—*Three Cases of Phthisis with contracted Lung.*

By R. Douglas Powell, M.D. *Read October* 23, 1868.

Case I.

William Downer, æt. 40. Admitted into the Brompton Hospital, under the care of Dr. Powell, July 18, 1868, during Dr. Sanderson's absence from town.

History.—Patient aged 40, married. A carpenter by

* Vol. li. p. 1. On some analogies of cholera in which suppression of urine is not accompanied by symptoms of uræmic poisoning.

† The details of this case were published by Dr. Horace Jeaffreson in the 'Edinburgh Med. Journ.' for December 1866.

trade; both parents living, healthy; one brother died of phthisis. Patient was quite well till six years ago, when he had a cough, this ceased, and he then remained well until twelve months ago, when he had inflammation of the lungs, from which he has never recovered. In February last (six months ago) he had hæmoptysis to the amount of two pints, and he has occasionally spit blood since; has been losing flesh for twelve months. Patient now coughs, with abundant mucopurulent expectoration, nummulated and floating in a clear fluid. Appetite fair, bowels costive. He is slightly

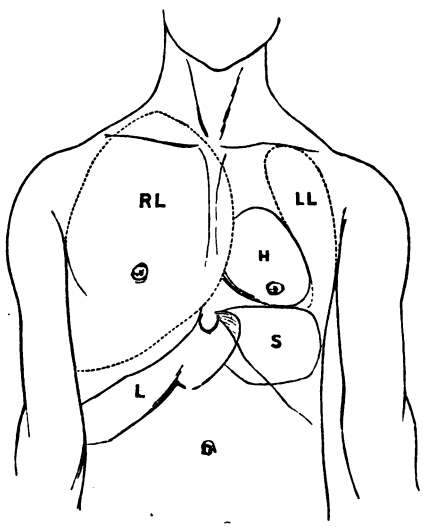

FIG. 1 (illustrating Case I.).—R.L. Right lung, reaching across median line. L.L. Left lung contracted, leaving pericardium uncovered. H. Heart, apex at 4th interspace to left of nipple. S. Stomach drawn up to 5th rib. L. Liver.

emaciated, but has not at all the aspect of phthisis; complexion pale with a straw tint.

Physical signs.—No movement with inspiration of left side of chest. Percussion (left side) dull anteriorly from apex to fifth rib, and to within an inch and a half of the middle line, where the resonance of the opposite lung commences. Respiration harsh, feeble in subclavicular region. At the outer part of the third rib, distant, tubular, with cavernous clicks on cough, and bronchophony. Feeble below.

Heart's apex beats in the fourth interspace, two inches to the left of the nipple line; sounds normal. Stomach

resonance obtained below the fifth rib. Posteriorly—in supraspinous fossa dullness, with bronchial respiration and bronchophony. Scapular region—dull, with tubular respiration and cavernous cough. Base, more resonant to the axillary line, respiration feeble, harsh, but with more vesicular quality than elsewhere.

At the right apex the respiration is harsh and divided with prolonged expiration.

Liver dullness unchanged, no enlargement of spleen detected.

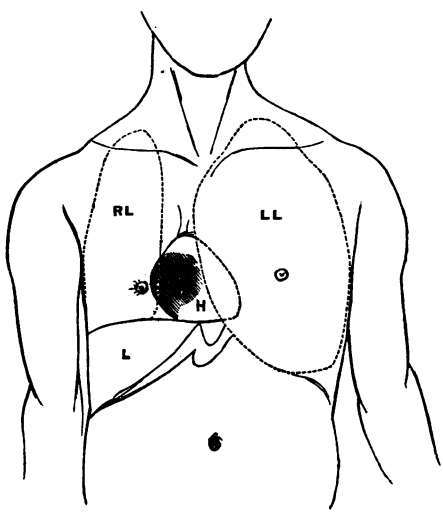

FIG. 2.—R.L. Right lung contracted, leaving pericardium uncovered. L. L. Left lung, extending across median line. H. Heart, area of impulse and dullness indicated by shading. L. Liver.

Diagnosis.—(See Fig. 1 showing position of organs.) Left lung contracted, indurated, with a long vertical cavity occupying the posterior part of the lung. Pleura greatly thickened. Right lung enlarged by compensatory hypertrophy, but becoming involved at the apex and anterior margin.*

Progress.—Patient, soon after admission, July 24, had an attack of copious hæmoptysis (1 pint), which was repeated on July 27, and prevented a thorough examination of the chest until July 31, when the above notes were taken. The

* An exact diagnosis as to the nature of the disease was not arrived at during life.

hæmoptysis was repeated on August 6 and 8, the sputa having been more or less tinged in the intervals, and the patient died with a fifth attack of hæmoptysis on August 9.

Treatment.—Astringents.

Post-mortem examination twenty-four hours after death; weather very hot; body not emaciated; a considerable layer of adipose tissue covering the muscles. On removing sternum and cartilages, the right lung is seen to extend across the median line, its anterior margin opposite the third cartilage, reaching a line drawn vertically downwards from a point ¾ in. to the left of the sterno-clavicular articulation.

The left lung opposite the second rib reaches by a thin hard margin to within ¾ in. of the line of sterno-clavicular articulation, then slants backwards to the axillary line, becoming invisible from the front. The heart's apex is opposite the interval between the fourth and fifth ribs in the anterior axillary line. Inferiorly the diaphragm arches upwards to the level of the fifth rib.

Heart healthy, rather large, the right cavities somewhat increased in size. Pulmonary artery measures across valves 3 inches; aorta ditto.

Left Lung.—Very firmly adherent, removed with great difficulty.

Anterior margin of lung is thin, tough, leathery feeling, covered by a considerable quantity of fat between the pleura and pericardium; this fat is more abundant above, and contains some deeply pigmented glands. On section this portion of the lung is of an iron-gray colour, with ramified points of pigmentation; on closer inspection numerous very minute round glistening granules are seen looking very like small gray granulations. The margin of the lower half of the lung is still firmer and excavated.

Lateral part of upper lobe. The thickness of the pleura varies from ¼ to ½ an inch; immediately under the pleura is a thin layer of hardened, very tough, gray pigmented lung tissue, at parts thinned down by excavation to the pleura, at others thicker and prolonged inwards, forming horizontal septa which divide one cavity from another. Opposite the septa the pleura is also thicker and prolonged a little inwards. Scattered through the deeply pigmented tissue, and also in the pleura, are seen similar glistening points to those mentioned above.

The lateral part of the lower lobe is tough, collapsed, and sinks in water, but is more spongy in texture than the cor-

responding part above. The pleura covering it is from $\frac{1}{16}$th to $\frac{1}{8}$th of an inch in thickness, and numerous fine processes are seen directed downwards from the interlobular septum, and less plainly inwards from the parietal pleura. The tissue is seen to contain many granulations, a large number of which are situated on the fibrous processes.

Posterior part, pleura greatly thickened at the apex, $\frac{3}{4}$ in. at its thickest part. Three principal excavations occupy from above downwards this part of the lung. They are bounded by a thin layer of pigmented consolidated lung tissue, sending septa inwards, which separate them from one another. The interlobular septum, with a layer of lung tissue on each side of it, forms one of these partitions. The cavities contain but very little secretion, some clotted blood, and are lined by a smooth and tolerably tough false membrane. These cavities communicate widely with bronchial tubes. In the lowest and smallest cavity is seen at its anterior part a small pulmonary aneurism, size of a pea, the vessel becoming obliterated at a distance of $\frac{1}{2}$ an inch beyond the dilatation. At quite the posterior part of the lower lobe, and at a small portion below the lower cavity, the pulmonary tissue is more spongy than elsewhere, but collapsed.

The right lung—perfectly free from adhesions. The pleura healthy, with the exception of one or two gray granulations seen on its surface. The lung is much enlarged and emphysematous. On section at the apex are seen, pretty numerously scattered, gray granulations,* hard, shotty feeling, surrounded by emphysematous tissue. The posterior part of the apex and also of lower lobe congested. At one spot in the apex is a dry, almost cretaceous encysted mass about the size of a pea. There are also gray granulations scattered through the upper lobe and very thinly through the lower.

Liver, Kidneys, Spleen } not obviously diseased—not examined microscopically.

Intestines—not examined.

Microscopical characters.—Less diseased part from base of lung. A section taken from this portion shows a general

* It is worthy of remark, that many of these granulations are slightly larger that the miliary granulations of acute general tuberculosis, many of them also have a more angular form; they are identical with the typical gray granulations in every other respect. This tendency to angularity I have several times observed in cases marked by chronicity.

groundwork to consist of cells and nuclei, varying in size from the large connective tissue cell to the tubercular nucleus or cell; these cells and nuclei are mixed up together without any very definite order, but in the walls and neighbourhood of bronchial tubes, vessels, and collapsed alveoli, the nuclei are more densely crowded. There is a delicate, ill-defined, and faintly granular fibrous stroma, in which the larger cells give off one or more fine processes, at favourable portions of section being seen to form by the communication of these processes complete networks. Here and there are portions of lung tissue, where the alveoli are patent and perfectly healthy, but they are for the most part collapsed, and their walls thickened, forming stellate fibro-nuclear masses. The alveoli are at this part remarkably free from large granular cells (epithelial pneumonia), all those affected being, as above said, simply collapsed and their walls thickened.

In the dense tissue surrounding the cavities, the fibrous stroma is strongly marked, the fibres appearing broad, flattened, homogeneous, intercommunicating, and in the interspaces, and on the fibres themselves, are innumerable nuclei or cells similar in size and appearance to tubercular nuclei. These nuclei are at parts densely crowded together, excluding the fibres, or only admitting fine processes between them. In favourable situations, the large connective tissue cells, with their communicating processes, can be readily distinguished. There are also collections of pigment scattered over the field. Many of the alveoli here are seen to contain large granular pneumonic cells, their walls being much thickened by the fibro-nuclear growth.

Comments.—The history of this case points to the disease being tubercular and having an inflammatory origin, and the interpretation of the morbid appearances that I would suggest is the following:—

There has been old arrested disease, which has produced the excavations now dried up; succeeding to this there has been a second disease, differing from the first not in kind, but in rapidity of progress, this difference arising from there having been in the first attack some intra-lobular complication (catarrhal pneumonia). This second disease is indeed a true interstitial pneumonia accompanying the tubercular granulations. Finally, in the opposite lung, the disease reassumes its common character of gray granulations without any fibrous change associated with it.

The case is remarkable for the extent to which the interstitial pneumonia has proceeded, less degrees of this pneumonia being common in all cases of chronic tubercular phthisis. The distinction clinically between this case and one of cirrhosis is obvious, there being excavation of two-thirds of the lung, a careful physical examination being alone necessary.

Chronic pneumonia and pleurisy were excluded by the disease being most advanced at the upper part of the lung.

The distinction during life between this disease and that described by Dr. Clark as Fibroid Phthisis, would be very difficult, for though there was evidently disease at the apex, it was less marked here than at the third rib and scapular region. Moreover though, at the time this case was examined, the other apex was evidently involved, yet the presence of this sign is a mere question of time, and it might not have been present a month earlier while the disease was in full progress. There was no cardiac murmur in this case; the presence or absence of cardiac murmur in these cases has never, I think, been satisfactorily explained, for it is not uncommon to meet with cases of very considerable displacement of heart without any murmur, and a murmur may be present at one time and absent at another.

This patient died directly from hæmoptysis, while his lung disease was yet in mid career. There was therefore no opportunity for any treatment, and I would therefore reserve the few remarks I have to make on that subject for another communication.

The cause of this hæmoptysis was found to be the rupture of a small dilatation of a branch of the pulmonary artery. This mode of occurrence of hæmoptysis has attracted much attention of late, and is now recognised as one of the most common causes of fatal hæmoptysis, as it certainly is also an occasional cause of hæmoptysis which is not fatal. Of eight cases of fatal hæmoptysis which have been carefully examined post-mortem at Brompton since February 1868, in six an aneurism of a pulmonary vessel has been the source of hæmorrhage.

Case II.

Thomas Joiner, æt. 38, admitted an out-patient under my care, at the Brompton Hospital, May 30, 1868.

Family history.—Grand-parents lived to a great age.

Father died aged 84, and mother aged 76, of natural decay. No uncles or aunts have suffered with any chest affection. Patient has four sisters and one brother living, has lost two brothers, one, aged 50, died of dropsy, the other, aged 31, of a tumour on the back.

Personal history.—A gardener, of regular habits, has been married sixteen years, no family, wife has had no miscarriages. Patient had slight gonorrhœa many years ago, never syphilis, never suffered from fistula. He was laid up five years ago with some head affection; some pills were given him which caused him to sweat profusely; he got up and went downstairs afterwards in his shirt while damp with perspiration, and got a chill, which increased the severity of the head symptoms; he states that he did not suffer from the chest at this time; was laid up for seven weeks. In January, 1868, he suffered from chilliness and sweats, with pain across the chest of a darting character and slight cough; he kept upstairs for fourteen days, and was confined to bed for one week; has been ailing since. Expectorated a few lumps of blood in April; has been getting thinner. Complains now of occasional cough, slight expectoration, pain in left lower axillary region. Appetite good, pulse moderate, tongue thinly coated, bowels regular.

Patient is a medium sized, rather spare man, with an oval face, clear complexion and fresh colour, hair abundant, dark.

His chest was first examined June 13, but the physical signs then noticed only differed from those stated in the present note in a few particulars to be afterwards mentioned.

Oct. 7.—Has improved considerably in appearance, has gained some flesh.

Pulse 100.

Marked lowering of shoulders. L. nipple $\frac{7}{8}$ in. lower than R.

R side measures,	1 in. below nipple,		17 in.;	expansion	$\frac{3}{4}$ in.
L	,,	,,	,,	16 ,,	,,	nil.
R	,,	1 in. above	,,	19 ,,	,,	$\frac{1}{2}$ in.
L	,,	,,	,,	17 ,,	,,	$\frac{1}{4}$ in.

Mid sternum to R nipple $4\frac{1}{2}$ in., to left nipple $3\frac{7}{8}$ in.

Left side.—No expansion, decided flattening infra-clavicular region and infra-mammary region, slight bulging axillary region. Heart's impulse extended, apex beats a little outside nipple in fifth interspace.

Percussion, in nipple line, wooden to fourth rib, dull from

fourth to lower border of fifth, where stomach resonance is obtained. Axillary region, dull posterior to a line extending obliquely downwards and forwards from mid axilla to below nipple. Supra-spinous fossa hyper-resonant to spine of scapula and in interscapular region to within two inches of angle of scapula, dull elsewhere, except within an inch of spinal column, where there is some resonance.

Respiration, supra-clavicular region, harsh, wavy, with prolonged expiration. Infra-clavicular region imperfectly bronchial and jerking with bronchophony; at the second and third ribs, nipple line, very bronchial and jerking, very feeble elsewhere anteriorly. In the axilla respiration is bronchial and blowing above, feeble with bronchial expiration below. Supra-spinous fossa bronchial with conducted whisper, more intensely bronchial just below spine of scapula with pectoriloquy. Feeble and bronchial below, a few clicks were heard after cough near angle of scapular. Near the spinal column, respiration is vesicular and exaggerated.

Vocal fremitus lessened both anteriorly and posteriorly, more particularly at the lower part.

Right side.—Hyper-resonant, the resonance extends beyond median line above, reaching $\frac{3}{4}$ in. to left of sterno-clavicular articulation, and slants downwards, so that at fifth cartilage it is $\frac{1}{4}$ in. to left of middle line. Liver dullness commences at seventh rib.

Respiration below and above the right clavicle, and also in the supra-spinous fossa, harsh, divided, expiration and inspiration equal, elsewhere exaggerated vesicular.

The differences between the physical signs noted now and those of June 13, are—

Left side.—At the apex percussion now more resisting, and respiration more bronchial. At the third rib there were large clicks to be heard; these have now disappeared.

Right side.—At the apex, where before simply exaggerated, the respiration is now harsh, divided with prolonged expiration.

Oct. 21.—On again examining the right apex, the respiratory sounds were as before; there was some moist crackling to a slight amount heard by Dr. Sanderson and myself, above the clavicle.

23.—Urine thick, cloudy, faintly acid, sp. gr. 1028, clears on boiling, no albumen. On adding nitric acid after boiling effervesces freely and becomes of purplish tint. Another portion clears on adding liquor potassæ, and its colour re-

mains unchanged, or but slightly deepened on boiling with the alkali.

Remarks.—Whether the patient had any chest complication with his illness five years ago, it is impossible to say; the medical gentleman who attended him has, unfortunately, no notes of the case. The patient dates his present illness from an acute attack he had in February. This attack was probably one of pneumonia of a mild character, but which has never cleared off. This case is, probably, very similar in character to the preceding, being one of chronic tuberculisation, with much interstitial pneumonia, supervening upon an acute inflammatory disease of the lung, affecting the base and very likely simple in its nature. The peculiar slow growth of the secondary disease, and the abundance of fibre growth associated with it, appear to be accounted for by (1) the constitutional inaptitude of the patient and (2) the mechanically quiescent condition of the part affected, being most favourable for uninterrupted slow growth.

The disease appears to be now invading the other lung in its usual form of gray granulations, unaccompanied with any excessive connective tissue growth, and at its usual seat, the apex of the lung.

27.—The temperature has been taken for five days since patient has been in the Middlesex Hospital, and it is remarkable that it has never been above 98° F., and the pulse and respiration have been quiet; although the physical signs seem unmistakably to point to slowly but steadily advancing disease in the opposite lung.

A short blowing systolic murmur, most audible a little above the apex near sternum, pointed out to-day by Dr. Clark.

Case III.

William Clay, æt. 57, admitted into the Brompton Hospital, under the care of Dr. Sanderson, August 15, 1868.

History, &c.—Patient is a farm labourer, of temperate habits, married, has six children living, two died young, one aged about seven of some lingering illness, the nature of which is unknown to him. Grand-parents both lived to a great age. Mother now living, healthy, aged eighty-seven. Father died, aged sixty, of cold, having been ill only one week.

Patient has one sister living, healthy, has lost two brothers

—one, a soldier, of black fever; the other, a hard drinker, who died after two months' illness; he had slight cough, but no wasting; has lost two sisters, both of whom died in child-bed. Patient was a strong and healthy man up to February last, having had no previous illness except occasional lumbago; never had the venereal disease. In February he caught cold from getting his feet wet; had some shivering, and pain in the left side, and was feverish, but did not keep his bed; had a slight cough, but no expectoration. This illness lasted six weeks, but he states that he never quite recovered it. He has never had hæmoptysis nor diarrhœa. Complained on admission of pain in the left side and shortness of breath, no cough nor expectoration, slight emaciation.

Appearance.—A stoutly built man of about middle stature. Complexion pale with a sallow tinge, scanty growth of hair, expression stolid without animation, no gouty deposits in ears.

Physical examination of the chest.—Left side, no expansion, shoulder lowered; supra and infra clavicular regions, percussion resisting with deficient resonance to lower border of second rib, respiration very harsh, jerking, with prolonged expiration. From second to lower border of fifth rib absolute dullness. At the outer part of second interspace respiration very tubular, with a few clicks and pectoriloquy; these sounds become less marked and more distant as examination proceeds downwards. The apex of the heart impinges at the fifth interspace three quarters of an inch to the left of nipple line. Heart sounds normal, stomach resonance is obtained below the fifth rib, nipple line. The resonance of the right lung extends to the left of middle line, reaching opposite the second and third cartilages the sterno-clavicular line.

On the right side very good resonance and expansion, with exaggerated breath sound. Liver dullness; on deep percussion sixth rib, superficial seventh, vertical dullness in nipple line three inches.

Posteriorly. — Left supra-spinous fossa percussion and auscultation give the same results as in the infra-clavicular region, except that the expiration is more prolonged and somewhat tubular. From the spine of the scapula downwards dullness absolute with no vocal fremitus. Respiration opposite the spine of scapula tubular, becoming more distant as examination proceeds downwards, altogether absent below the level of the eighth vertebral spine.

On the right side good resonance with exaggerated breath sound.

Average pulse 90 in the minute. Temperature taken for four days in August 100° in the evening, 99° F. in the morning.

Re-examined, Oct. 3.—No appreciable difference in the physical signs on the left side. Flattening in infra-clavicular and supra-mammary regions well marked, with diminution in size of pectoralis muscle. To measurement the two sides are equal in circumference below nipple.

On the right side, where before the respiration was simply exaggerated, it is now, at the apex above and below the clavicle, harsh, divided; expiration equal in length to inspiration, and having some tubular quality. Elsewhere respiration exaggerated, with some harshness and dryness.

Oct. 4.—	Pulse	88,	respiration	20,	temperature	99° F.
5.—	„	88	„	20	„	98·5° F.
13.—	„	96	„	27	„	98·8° F.

Urine sp. gr. 1020, pale, a very distinct cloud on boiling, not cleared by nitric acid, no casts detected; but on Oct. 14 by adding a little iodine to some sediment of the urine, and putting a drop under the microscope, many casts were seen, large granular, granules refracting, mostly with no epithelium, but here and there a single epithelium cell seen—some granule cells, pus cells, and a few blood cells seen. The casts were mostly of one size, but a few were very large and some small.

This case resembles, in many respects, one of fibroid phthisis of constitutional origin, viz., in the harshness and opacity of the skin, the very non-tubercular physiognomy of the patient, the clear evidence of renal disease, most probably of the contracted variety, and the signs of contraction and induration of one lung with thickening of the pleura; but the disease has commenced in the lung subsequently to an acute inflammatory attack;* it has invaded the whole of the lung, and I feel persuaded that the apex of the right lung is also involved from the great harshness of the respiration there; it would, therefore, seem to me to be of the same nature as Downer's case with the additional renal disease. It may, of course, be well argued that even should the opposite lung become more decidedly involved (as in Case

* Dr. Spackman, of Farringdon, saw the patient when ill in February, and considered him to be suffering from pleuro-pneumonia.

II., Joiner), this may be a secondary or rather tertiary process of tuberculisation by inoculation from the cheesy deposits in the left lung. This explanation may be the true one, and it might apply to all these cases of phthisis with contracted lung, rendering them all cases of engrafted tubercle; if true, however, we must consider the tubercle as engrafted upon the original inflammatory disease of the lung, not upon an intermediate fibroid affection, and in this view the chronic progress of the tuberculisation in the lung first affected, dependent upon its state of forced quiescence, with the later involvement of the opposite lung, would well account for the symptoms without any intermediate stage of simple fibroid disease.

General Remarks and Treatment.—The chief object in view in bringing these cases before the notice of the Clinical Society has been to elicit the opinion of the Fellows as to whether there is or is not a substantive disease to which the term 'fibroid phthisis' is applicable; a disease which is independent of tubercle,* or any definite local irritation, and which, when secondary to pneumonia or pleurisy, is in itself a progressive disease—i.e. a disease spreading beyond the limits of the primary lesion. I have placed the term 'phthisis with contracted lung' at the head of this paper, as indicating my own uncertainty on the question, and because I conceive it to be a more truly clinical term than 'fibroid phthisis.' The pure disease described by Dr. Clark under this term as of constitutional origin must be, I think, regarded as of very rare occurrence; while, on the other hand, the cases of 'fibroid phthisis,' considered by Dr. Clark as of local origin, are very common, and closely resemble one another in the physical signs which distinguish them; which physical signs are the result of a process of contraction of one lung, from whatever cause this contraction may arise.

All the cases of phthisis with contracted lung which have come under my own observation have had a local origin, the disease having supervened upon the cessation of some acute pulmonary affection, either simple basic pneumonia, or pleurisy, or tubercular pneumonia,† at one apex. Though

* By tubercle is meant a morbid growth, having its first stage in the gray granulation.

† By tubercular pneumonia is here meant tubercle, accompanied by much catarrhal or epithelial pneumonia; perhaps simple phthisical pneumonia should also be added.

limited at first to one lung, the other lung has later become affected in many, both basic and apex cases, and was so in all the five examples of which I have made examinations post mortem. The secondary disease has appeared to me to be chronic tuberculisation, in which the granulations have developed into a fibroid tissue (similar to that of the iron-gray induration of Addison), accompanied with more connective tissue growth (interstitial pneumonia) than is usually met with. The disease in the opposite lung has always been in the form of granulations, with more or less epithelial pneumonia, and some scattered lobular consolidations.

Several of the above cases are still under observation, and I hope, at some future time, to give some account of the experience derived from them.

The particular signs which are essential to all cases of phthisis with contracted lung, viz. flattening of the chest wall, displacement of organs towards the diseased side, and uncovering of the pericardium on that side, are all due to the shrinking of the lung, its vesicular tissue being gradually replaced by a solid fibrous material occupying less space. The great thickening of the pleura also, which gives the peculiarity to some of the physical signs, is the result of the same shrinking process: it cannot, I think, be regarded as truly inflammatory, but rather as a growth induced by the tendency to the separation of the pleural layers, and which is usually preceded by an earlier stage of serous effusion into a loose areolar tissue between these layers (œdema of the pleura). This stage of œdema can often be seen over a portion of lung less diseased, while the pleura above or below is converted into a solid thickness of dense fibrous tissue.* The position of maximum cardiac pulsation is liable, in some of these cases, to lead to error in diagnosis, since, when the right lung is contracted, the pericardium is uncovered on this side, and a systolic impulse is then felt and seen to the right of the sternum (see Fig. 2), and it may be very difficult or impossible to discover pulsation at any other spot, though the apex of the heart is really only a little more within the nipple than natural, but it is covered by the large left lung, or sheltered behind the sternum; hence the cardiac displacement appears much greater than it really is.

We learn from the study of these interesting diseases the

* See 'Pathological Transactions,' vol. xx., case of chronic phthisis, illustrating one mode of thickening of the pleura.

extreme importance of making every effort to bring about complete recovery from acute inflammations of the lung or pleura before the patient returns to the ordinary work of life; a change of climate for a time, in all doubtful cases, naturally suggests itself. Iodide of potassium, iron, and cod liver oil are well-known useful remedies. I think I have seen very great relief from the continued use of the iodine inunction, both in these diseases and in aiding recovery from ordinary chronic pneumonia and pleurisy; the ointment acts as a mild counter-irritant, relieving the dragging pains so commonly felt, and some of the iodine is, no doubt, absorbed, though in very minute quantity.* In some cases the cough is almost nil, in others very troublesome, and, as pointed out by Dr. Clark, often attended with vomiting; this is caused by the impaired structure of the lung and bronchial tubes, rendering expectoration very difficult; sedative inhalations are often useful. There are a few cases in which the cough is very paroxysmal, and comes on after meals, terminating in vomiting; in these cases strychnia is of great service.

XXXVI.—*Statistical Analysis of Cases of Acute and Subacute Rheumatism, chiefly in reference to the Proportion of Cardiac Complications.* By Thomas Bevill Peacock, M.D. *Read October* 9, 1868.

THE following report includes all the cases of acute and subacute rheumatism of which I possess notes, but not all those treated by myself during the period over which it extends; for some cases were not fully reported, and the ward books containing the records of others have been lost. The cases analysed may, however, be taken as fairly representing the whole of those treated. They are all cases which would be included under the general designation of rheumatic fever; and, though the terms acute and subacute are employed, these must be understood as referring only to the greater or less amount of local inflammation and of constitutional disturbance, no cases of chronic rheumatism or

* I was unable to detect any iodine in the urine of the patient Clay, who was treated in this way.

of simple rheumatic pain, with slight general disorder, being included in the series.

The collection of cases embraces three sets, which, for reasons which will be afterwards apparent, I have thought it better to subject to separate analysis.

1. A series of 21 cases treated at the Royal Free Hospital from September 1846 to the same date of 1849.

2. A series of 52 cases treated at St. Thomas's Hospital, before its removal from the old site at London Bridge, from November 1851 to April 1862.

3. A series of 73 cases treated at St. Thomas's Hospital, since the establishment has been at the Surrey Gardens, from October 1862 to March 1868.

Of these three series there are separate reports, and finally an abstract is given of the general results of the whole of the 146 cases taken together.

Abstract of Cases of Acute and Subacute Rheumatism treated at the Royal Free Hospital from Sept. 1846 *to the same date* 1849.

The total number of cases of acute and subacute rheumatism treated at the Royal Free Hospital from Sept. 1846 to the same date of 1849 was 21.

Of these were males 12—57·1 per cent.
„ females 9—42·8 „

The mean age of the males was 24·5—the extreme ages being 4 and 14 and 31 and 47. The mean age of the females was 26·8—the extreme ages 16 and 17 and 39 and 48. Of the whole of the cases 6 are stated never to have had any previous attack of rheumatism; in 5 there had been one or more previous attacks; and in 10 the reports are defective on this point, but in by far the majority it may safely be concluded that enquiry was specially made and answered in the negative.

The date of the previous attacks was from a few months to 14 or 15 years before that for which the patient came under treatment; and in some cases there had been only one previous attack, in others several.

In 12 cases the patients had been suffering from the rheumatic symptoms more or less severely for periods varying from 2 days to a week.
„ 1 case the patient had been ill 2 weeks;
„ 1 „ „ „ 2 or 3 weeks;

In 3 cases the patient had been ill 3 weeks; and
„ 1 case the patient had been ailing 2 months;
„ 1 „ „ „ 4 months;
„ 1 „ „ „ for a considerable time, but worse 6 days; and
„ 1 „ the patient had old disease, with recent rheumatic symptoms of which the duration was not ascertained.

The treatment to which the patients were subjected varied in different cases: that most commonly adopted was the employment of colchicum in small doses, with aperients, alkalies, or iodide of potassium. In some cases the tincture of aconite was used; and, when there were cardiac symptoms, mercurials with opium, generally in the form of Dover's powder, and cupping and counter-irritation, were had recourse to. In two cases the patients were under the influence of mercury when admitted, and cardiac symptoms were then beginning to develop themselves. The external remedies consisted of baths, packing, and local applications. After the urgent symptoms were subdued, quinine and iron were very generally given.

The results were as follows:—

The acute cases were 11 in number, or 52·3 per cent.
The subacute „ 10 „ 47·6 „
Of the 11 acute cases were males 5;
„ „ females 6.

Of the males one, and of the females two presented no signs or symptoms of cardiac affection, and one male displayed slight signs only. Regarding the latter as healthy, the heart was unaffected in 4 cases, or in 1 case in 2·7, or 36·3 per cent.

Of the other cases had pericarditis males 0, females 1;
„ „ endocarditis only „ 3 „ 3.

The cases of recent cardiac complication were, therefore, 7 in number, or 1 case in 1·5, or 66·6 per cent.

Of the 10 subacute cases were males 7,
„ „ females 3.
Of these were wholly free from signs or symptoms of cardiac affection, male 1, female 0.
Had slight signs only, males 2, female 0.

The cases uncomplicated by heart affection were, therefore, 3 in number, or 1 case in 3·3, or 30 per cent.

Of the remainder had peri- and endocarditis, males 1, females 1;
„ „ endocarditis only „ 2 „ 2;
„ „ old cardiac disease „ 1 „ 0.

The number of cases in which cardiac complications existed was therefore 7, or 1 case in 1·4, or 70 per cent.

Taking both series of cases together—

4 cases were entirely free from cardiac affection;
3 „ had only slight signs, and may be regarded as free; the total number being 7, or 1 case in 3, or 33·8 per cent.;
1 case had pericarditis only;
2 cases had peri- and endocarditis;
10 „ had endocarditis only; and
1 case had old disease only.

The total number in which cardiac affection occurred being thus 14, or 1 case in 1·5, or 66·6 per cent.

If the case in which there was old disease be not calculated, the cases of recent heart complication only are 13, or 1 case in 1·6, or 61·9 per cent. In one of the cases of peri- and endocarditis there was also old disease, the sequence of a previous attack of rheumatism of which the date was not ascertained. It is probable also that in other cases in which there was marked cardiac disease, there may have been recent rheumatic symptoms which may have escaped enumeration, from the cases being reported only as cardiac.

The mean age of the patients with recent cardiac complication did not materially differ from that of the other patients, being in males 23·3 years, and in females 22·3. Of the cases in which recent cardiac complication occurred, 9 are reported or may be inferred to have been recent or first attacks, and in 4 the patients had previously suffered from rheumatism.

Of the 13 cases of recent heart affection, in 5 the symptoms and signs were present to a more or less marked degree at the time of the patients' admission into the hospital;

In 3 they were reported two days after, when the first notes were taken.

In one they commenced two days after admission;
„ two „ three days after;
„ one „ ten days after; and
„ one „ twelve days after.

Thus in 8 cases the cardiac complications may be inferred to have been established at the time of the patients' admission; while in 5 they came on while they were under treatment.

In addition to these complications, two patients suffered from ague: in one of which there was endocarditis and a

large abscess found in the popliteal space; in the other there was pneumonia, the heart being free. In a third case, in combination with endocarditis there was erysipelas, with serious head affection and abdominal disorder. In a fourth, in which there was also endocarditis, there was jaundice and profuse diarrhœa.

In all these cases but one the patients recovered from the rheumatic attacks more or less completely. In that instance, a female, thirty-nine years of age, had subacute rheumatism with pericarditis and renal disease, and died five days after admission; and the heart was found to be the seat of old disease of the aortic and mitral valves. The occurrence of rheumatism previously is not mentioned.

In another case of pericarditis, occurring in an attack of acute rheumatism in a female of sixteen, the symptoms were coming on at the time of the patient's admission on the second day of illness, and they had entirely subsided five days after, and she was discharged cured eleven days after. The occurrence of a former attack is not reported.

In a third case of peri- and endocarditis, in a case of subacute rheumatism in a male æt. 18, who had not previously had rheumatism, the symptoms were also commencing at the time of the patient's admission after three weeks' illness; and the pericarditic signs subsided, but an endocarditic murmur remained at the time of discharge, twenty-five days after. The patient had been under treatment nine days before his admission into the hospital, and was then under the influence of mercury.

In the cases of endocarditis the result was as follows:—

In a case of subacute rheumatism, in a female æt. 28, there was palpitation at the time of admission after two weeks' illness, and the murmur was loudly heard two days after, and continued still audible at the time of discharge thirty-one days after. No report of previous attack.

In a case of acute rheumatism in a female æt. 19, the murmur was loudly heard two days after admission on the third day of illness, and was still noticed eleven days after, when the last notes were taken; the patient being discharged on the twenty-seventh day.

In a case of acute rheumatism in a male æt. 14, who had not previously had rheumatism, the murmur was loudly heard two days after admission on the fourth or fifth day, and was still heard nine days after, the patient being discharged on the twenty-sixth day.

In a case of acute rheumatism in a male æt. 23, who had had two previous attacks in two years, the symptoms were commencing on admission after one week's illness, and were entirely gone sixteen days after, the patient being discharged on the twenty-ninth day.

In one case the symptoms were present on admission, after the patient had been ill four months, but worse recently. The case was one of subacute rheumatism in a female æt. 17, and the signs still remained at the time of discharge thirty-nine days after.

In a case of subacute rheumatism in a female æt. 27, in whom no previous attack is reported, the signs were commencing two days after her admission on the seventh day, and had nearly disappeared sixteen days after; the patient being discharged twenty-nine days after.

In one case of acute rheumatism in a male æt. 28, who had not had any previous attack, the symptoms were commencing three days after admission on the seventh day, and were still heard sixteen days after, and the patient was discharged in forty-four days.

In a case of subacute rheumatism in a male æt. 26, the signs commenced three days after admission on the second day of illness, and had entirely disappeared twenty-one days after; the patient was discharged in twenty-three days; the occurrence of a previous attack not being reported.

In a case of subacute rheumatism in a male æt. 31, the signs appeared ten days after admission after three weeks' illness, and were entirely gone on discharge thirty-two days after. No mention of previous attack.

In a case of acute rheumatism in a female æt. 27, in whom no previous attack is reported, the signs were commencing twelve days after admission, after one week's illness, and had entirely disappeared at discharge twenty-nine days after.

It thus appears, that of the thirteen cases in which there was recent cardiac complication, in one case of pericarditis the patient entirely recovered; in one of peri- and endocarditis the pericarditis was cured, while the signs of the endocarditis remained; and in one, in which there was pericarditis with old disease, the patient died. In ten cases of endocarditis, in five the symptoms and signs may be considered to have been entirely removed, while in five others they remained. Or taking the whole thirteen cases of recent cardiac affection, one, in which the patient had also old disease, proved fatal; in six the patients entirely recovered;

and in six, though the symptoms were very greatly relieved, a murmur still remained at the time of discharge.

The average duration of residence of all the cases was 28·9 days, this estimate including the case in which the patient died on the fifth day from admission. The average duration of residence before convalescence was fully established was 23·5 days.*

Of the uncomplicated cases, the mean duration of residence was 28·5 days; the extremes being 17 and 25 days (in three cases), and 34 and 46 days.

The period which elapsed before convalescence was, in the same cases, 23·3 days; and the extremes 13 and 18, and 24 and 32 days (in two cases).

The duration of residence in the cases with recent cardiac complication only was 32·4 days, and the extremes 11 and 25, and 44 and 57 days.

The period of treatment before convalescence was, on the average, 24 days, and the extremes 6 and 21 (in two cases), and 32 and 39 days.

In two cases the patients had ague: in one with endocarditis and an abscess in the popliteal space; in the other with pneumonia. The patients resided 26 and 48 days, and were convalescent in 19 and 35 days.

In two other cases with endocarditis there was cerebral and abdominal disorder and great prostration, and in one erysipelas, and the patients resided 32 and 23 days, and became convalescent in 18 and 20 days.

In one case, in which there was old cardiac disease, the patient was only ten days in the hospital; in the other, in which there was old cardiac and renal disease with recent peri- and endocarditis, the patient died in five days.

Abstract of Cases of Acute and Subacute Rheumatism treated at St. Thomas's Hospital, London Bridge, from November 1851 *to April* 1862.

Total number of cases 52.

Of these were males 26, or 50 per cent.
„ females 26 „ 50 „

* The case of old disease occurred in a boy æt. 6, who was admitted labouring under rh. s. ac., after six days of more active illness, and was discharged after a residence of ten days. Without this case the duration of residence would be 30·1 days. In one case, in a female, a murmur was heard which was regarded as anæmic.

The mean age of the males was 23·6 years, the extreme ages being 12 and 15 (2) and 53 and 42.

The mean age of the females was 23·4, the extremes being 14 (2) and 16, and 52 and 48.

Of the whole of the cases sixteen are said never previously to have suffered from rheumatism, sixteen to have had one or more previous attacks, and in twenty no report is made on this point, but probably in nearly all enquiry was made and answered in the negative. In some cases there had been only one previous attack, in others several; and the attacks are said to have occurred from a few months to fifteen years previously.

The patients had been ill before admission into the hospital

In 17 cases for 7 days or less;
„ 12 „ 2 weeks;
„ 6 „ 3 „
„ 2 „ 5 „
„ 1 case for 6 „
„ 1 „ 2 months;
„ 4 cases for 3 „ ; and
„ 1 case for 6 „

In one the patient had been seriously ill for 3 days, but previously ailing for 11 weeks.

In one for a week but ailing for 7 months.

In one for a year but suffering for 4 years.

In by far the largest proportion the cases were treated by small doses of iodide of potassium and colchicum with bicarbonate of potash. In some instances the bicarbonate and nitrate of potash were used; two or three patients took only lemon juice; and two were treated by large doses of quinine. The cardiac complications were relieved by the application of leeches, or more frequently blisters and poultices, and by the administration of mercury in the form of calomel or gray powder, with opium or Dover's powder.

The results were as follows:—

The whole of the cases were acute 21;
subacute 31.

Of the 21 acute cases were males 9=42·8 per cent.
„ „ „ females 12=57·1 „
Of the 31 subacute „ males 17=54·8 „
„ „ „ females 14=45·1 „

Of the acute cases—

Had no complication . . males 2 } 3;
„ „ . . female 1 }

Had slight symptoms only	. male	1	2;
„ „ .	. female	1	
„ slight signs only .	. males	5	9;
„ „ .	. females	4	
„ slight symptoms and signs	male	1	2;
„ „ „	. female	1	

thus making 16 or 76·1 per cent. in which the heart may be considered to have been free, or 1 case in 1·3.

Of the other cases, had peri- and endocarditis	. males	0,
„ „ „ „	. female	1;
„ „ endocarditis only .	. males	0,
„ „ „ .	. females	4.

making 5 cases of recent complication or 23·8 per cent. or 1 case in 4·2.

Of the subacute cases—

Had no complication .	. males	7	16;
„ „ .	. females	9	
„ slight symptoms only	. male	1	1;
„ „ .	. females	0	
„ slight signs only .	. male	1	3.
„ „ .	. females	2	

Regarding the latter as healthy, the uncomplicated cases were 20 or 64·5 per cent. or 1 case in 5·5.

Of the others—

Had peri- and endocarditis	. males	4	6;
„ „ .	. females	2	
„ endocarditis only .	. males	4	5;
„ „ .	. female	1	

making 11 cases of decided cardiac complication or 35·4 per cent. or 1 case in 2·8.

In none of the cases is old disease reported to have been present alone, but it is probable that old cardiac disease may have existed in several cases in which there were slight rheumatic symptoms, and having been classed under the latter head cannot readily be added to the collection of cases of rheumatism.

Taking the two sets of cases together, of the whole 52—

Had no symptoms or signs of cardiac disease	19;
„ slight symptoms only	3;
„ slight signs only	12;
„ slight signs and symptoms . . .	2.

making 36 uncomplicated cases or 69·2 per cent. or 1 case in 1·4.

Of the others—

Had peri- and endocarditis . 7,
„ endocarditis only . . 9,

making 16 cases with recent cardiac complication, or 30 per cent. or 1 case in 3·2.

In addition, however, to the cardiac complications, in one case there was acute capillary bronchitis, in another scarlatina which was followed by pneumonia. In two cases the patients had œdema of one leg, probably from fibrinous deposit in the arteries; in two there were secondary symptoms; and in one case the patient laboured also under ague.

In all the cases the patients recovered more or less completely from the rheumatic symptoms, the results in reference to the cardiac complications being as follows: In one case endocarditis existed on admission after three months' illness. The patient, a female æt. 18, had rh. ac. and had never previously had rheumatism, and the signs were still heard 21 days after, and probably existed at the period of discharge 34 days after.

In a second, a case of rh. ac. in a female æt. 20, endocarditis existed at the time of admission on the fifth day of illness. The previous occurrence of rheumatism is not reported, and the murmur still existed at the time of the patient's discharge 91 days after.

In a third case of rh. s. ac., in a female æt. 23, endocarditis is reported three days after admission in a case in which the patient had been previously ill for three months, and the symptoms had subsided on the patient's discharge 11 days after. The patient had had two previous attacks in 15 years.

In a fourth case of rh. ac., in a female æt. 17, peri- and endocarditis existed at the time of admission, in case in which the patient had had a relapse of three days' duration after 11 weeks of previous illness; a systolic murmur was still heard at the apex at the time of discharge 27 days after.

In a fifth case of rh. s. ac., in a male æt. 12, endocarditis existed at the time of the patient's admission on the tenth day of a first attack, and the murmur was still heard at discharge on the 48th day after.

In a sixth case peri- and endocarditis existed on admission after three weeks' illness, in a patient suffering from rh. s. ac., a male æt. 16, who had had a previous attack a year before, and the murmur remained 19 days after, and probably at discharge 44 days after.

In a seventh case endocarditic signs were noticed on ad-

mission, after a week's illness; the patient, a male æt. 20, suffered from rh. s. ac. He had had rheumatism 6 years before, and was discharged after 29 days, the state of the heart not being reported.

In an eighth case of rh. s. ac., in a male æt. 18, endocarditis came on five days after admission after two weeks' illness, and the patient had also pleurisy and pneumonia. He was discharged 40 days after, the state not being then reported. The patient had had two previous attacks in 12 years.

In a ninth case peri- and endocarditis were present at the time of the patient's admission, after six weeks of a first attack of subacute rheumatism, in a male æt. 17, and the signs had entirely disappeared on discharge 24 days after.

In a tenth case of rh. s. ac., in a female æt. 14, peri- and endocarditis and bronchitis existed at admission, after two weeks' illness, in a patient previously ill seven months, and the signs still existed at discharge 20 days after.

In the eleventh case of rh. ac., in a female æt. 19, endocarditic signs existed at the time of admission in a case in which the patient had been ill two months, and still existed at discharge 49 days after.

In the twelfth case of rh. ac., in a female æt. 16, the signs of endocarditis were present on admission after two weeks' illness, the occurrence of previous attack not being named; the signs had disappeared at discharge on the 62nd day.

In the thirteenth case of rh. s. ac., in a female æt. 15, peri- and endocarditic signs existed on admission, in a patient who had never previously had rheumatism, and who had been ill a week and ailing for a month. The murmur was still heard at discharge 49 days after.

In the fourteenth case the signs of peri- and endocarditis were commencing on admission on the seventh day of an attack of rh. s. ac., in a male æt. 16, and had disappeared on discharge on the 32nd day; the existence of previous attacks not being named.

In the fifteenth case of rh. s. ac., in a male æt. 23, endocarditic signs were noted at the time of admission after two weeks' illness, and had disappeared on discharge 12 days after; no mention of previous attack.

The sixteenth case, in a female æt. 30, peri- and endocarditis with pneumonia existed at the time of the patient's admission with a very slight attack of rheumatism. She had had two previous attacks in fourteen months. The endocarditic

murmur was still heard at discharge thirty-one days after, but the pericarditic signs had entirely disappeared.

It thus appears that the cardiac complications were commencing, or actually present, in a more or less marked form, in all the cases but two at the time of the patients' admission into the hospital, and in these instances they appeared on the third and on the fifth day after. It further appears that they occurred in 4 cases, in which the patients had not had previous attacks of rheumatism; in 4 cases in which the patients had one or more previous attacks, at periods varying from one year to fifteen years; and in two cases in which the patients had been ill two months and seven months before admission. In 6 cases the existence of previous attacks is not named in the reports. As to the result of the sixteen cases, in 6 all signs of cardiac disease had disappeared before the patient left the hospital; in 8 the signs or symptoms or both still remained to a more or less marked extent; and 2 cases the state of the patients at the time of discharge is not reported, but probably the signs had not disappeared.

The mean period of residence (excluding two cases, in one of which the patient was retained after the cure of the rheumatism for 62 days, in consequence of suffering from aguish symptoms; and in the other in which the duration of residence was 231 days, the patient having taken scarlatina, followed by pneumonia and disease of the knee) was before convalescence 21·5 days—the extremes being 5 and 8 days, and 38 and 44; and before discharge 33 days—the extremes being 6 and 8 days, and 56 and 62 days. The cases with cardiac complication remained on the average before convalescence 22·7 days and before discharge 37 days—the extremes being 8 and 10, and 62 and 91 days.

The mean age of all the patients without reference to sex is 23·5, and the mean age of those who presented cardiac complication is 18·3.

Abstract of Cases of Acute and Subacute Rheumatism treated at St. Thomas's Hospital, Surrey Gardens, from October 1862 *to March* 1868.

Total cases 73.

Males 40=54·7 per cent.
Females 33=45·2 „
Mean age males 23·1;

Extremes 10 and 14, and 35 (2) and 41.
Mean age females 21·1;
Extremes 11 and 14, and 38 and 50.

Of the whole of the patients—

Had had previous attacks of rheumatism . 26
Had not had any previous attack . . 17

The attack had been of long duration (from 1 to 20 months) and never recovered from 6.

Existence of previous attacks not stated in the reports 22.

Of the cases in which previous attacks had occurred:—

In 2 cases the patients had had one previous attack 18 months before.

In 1 case the patient had had one previous attack two years before.

In 2 cases the patients had had one previous attack three years before.

In 2 cases the patients had had one previous attack four years before.

In 1 case the patient had had one previous attack four or five years before.

In 1 case the patient had had one previous attack five years before.

In 1 case the patient had had one previous attack six years before.

In 1 case the patient had had one previous attack nine years before.

In 2 cases the patients had had one previous attack the time not being stated.

In 1 case the patient had had two previous attacks in two months.

In 1 case the patient had had two previous attacks in three years.

In 3 cases the patients had had two previous attacks in twelve years.

In 1 case the patient had had two previous attacks in thirteen years.

In 2 cases there had been two attacks, the time not being mentioned.

In 1 case there had been three attacks in seven years.

In 1 case there had been three attacks in nine years.

In 1 case there had been three attacks, the time not being named.

In 1 case there had been four attacks in eleven years, and

in one the patient had had several attacks, the time not being stated.

The immediate causes of the attacks were assigned in 32 cases. Of these in five the patients stated that they had taken cold from exposure to cold and damp, the period not being stated. In other cases the following causes were assigned :—

Exposure to draughts in his work.

Sleeping for some weeks in a damp and cold room into which the rain came.

Working as a navigator in a damp hole for a year.

Working in hot stoves and getting chilled after.

Working in hot-houses as a gardener and getting chilled after.

Repeatedly getting wet through.

Getting wet in going to his work in the morning, and allowing his clothes to dry on him, and the symptoms appeared that evening.

Exposure to wet and cold, and the symptoms appeared the same day.

Exposure to wet and cold at night, and the symptoms appeared the following day.

Exposure to cold in an empty house, and the symptoms appeared two days after.

One patient took a chill during the catamenial period, and the symptoms appeared two days after.

Two had been exposed to wet and cold a week before.

One had been exposed to wet and cold in washing a week before.

One had got wet a week before.

One took cold a week before.

One took cold nine days before.

One took cold eleven days before.

One got wet and let his clothes dry on him thirteen days before.

One got chilled two weeks before.

One took cold two weeks before.

One took cold in washing two weeks before.

One was exposed to cold and damp two weeks before.

One got wet through three weeks before.

Two took cold a month before.

One had had erysipelas of the head three weeks before.

One was constantly wet and cold during boisterous weather in the Baltic and in the voyage home for three weeks.

The duration of illness before admission was as follows :—

2 days in		2 cases		
3	„	5	„	
4	„	1	„	26 in first week.
5	„	5	„	
6	„	4	„	
7	„	9	„	
8	„	2	„	
9	„	3	„	
10	„	1	„	14 in second week.
11 or 12	„	1	„	
14	„	7	„	
17 or 18	„	1	„	7 in third week.
21	„	6	„	
1 month in		4	„	
1	„	3 days	1	„ 6 in fourth week.
1	„	2 weeks	1	„
6 weeks in		1	„	
7	„	5 days	1	„ 3 in second month.
7	„	2 weeks	1	„
10	„	5 weeks	1	„
13	„		1	„
6 months in		1	„	
6	„	3 days in	1	„
6	„	6 „	1	„
12	„		1	„
15	„	5 days	1	„
18	„	1 week	1	„
20	„	2 weeks	1	„
4 years		1 month	1	„

The treatment pursued consisted, in the greatest number of cases, in the employment of alkalies, the bicarbonate of potash alone or in combination with nitrate of potash; more rarely in the use of iodide of potassium and bicarbonate of potash, with very small doses of colchicum. Dover's powder, generally with small doses of calomel or gray powder, was frequently given at night; and for local application cotton wool was generally employed at the earlier part of the time, and latterly blisters were placed around the limbs above the affected joints. During convalescence quinine and iron were almost always given, and a liberal diet allowed. For the cardiac complications leeches, or more frequently blisters and poultices, and moderate use of mercurials were generally had recourse to.

The cases may be classed as follows :—

Acute rheumatism 19 cases:	Males	7=36·8	per cent.
	Females	12=63·1	„
Subacute rheumatism 51 cases:	Males	32=62·7	„
	Females	19=37·2	„

Acute rheumatism and scarlatina 2 cases:	Males	0	
	Females	2	
Typhoid and acute rheumatism	Male	1	

Of the cases of acute rheumatism—

Had no cardiac symptoms or signs	Male	1	3
	Females	2	
Had slight symptoms only	Females	2	
Had slight signs only	Males	0	3
	Females	3	
Had slight symptoms and signs	Male	1	2
	Female	1	

It may therefore be inferred that there were without cardiac complication 10.

Of the others—

Had pericarditis		0	
Peri- and endocarditis	Males	2	
Endocarditis	Males	3	7
	Females	4	

It thus appears there were decided cardiac complications in 9, or 1 case in 2·1, or 47·3 p. c. (all recent).

Of the cases of subacute rheumatism—

Had no cardiac symptoms or signs	Males	10	15
	Females	5	
Had slight symptoms only	Males	2	3
	Female	1	
Had slight signs only	Males	6	9
	Females	3	
Had slight symptoms and signs	Males	0	1
	Female	1	

May be inferred to have been without cardiac complications 28, or 54 p. c.

Of the others—

Had pericarditis		0	
Peri- and endocarditis	Males	4	
Endocarditis	Males	6	11
	Females	5	
Old disease	Males	4	8
	Females	4	

The cases of decided cardiac complications were therefore 23, or 1 case in 2·2, or 45·09 p. c.

The cardiac complications were recent in 15 cases, or 1 in 3·4, or 29·4 p. c.

And old in 8 cases, or 1 in 6·3 or 15·6 p. c.

Taking the two series of cases together, 70 in number—

Were entirely free from cardiac complications 18, or 1 in 3·8, or 25·7 p. c.
Had slight symptoms or signs or both 20, or 1 in 3·5, or 28·5 p. c.
And regarding all these as healthy, were without complication 38, or 1 in 1·57, or 54·2 p. c.
Presented decided cardiac complication 32, or 1 in 2·18, or 45·7 p. c.
Of these being recent 24, or 1 in 2·9, or 32·2 p. c.
And old 8, or 1 in 8·7, or 11·4 p. c.
Of the cases of recent complication were cases of peri- and endocarditis 6,* or 1 in 11·6, or 8·5 p. c.
Were cases of endocarditis 18,† or 1 in 3·8, or 25·7 p. c.

The cases of acute rheumatism and scarlatina were both free from cardiac complication, as was also the case in which the patient had typhoid.

Taking the whole of the 73 cases, 21, or 1 case in 3·47, or 28·7 p. c. were entirely free and 20, or 1 in 3·6, or 27·3 p. c. had only slight symptoms or signs, making 41 uncomplicated cases, or 1 in 1·7, or 56·1 p. c., while 32 had decided complication, or 1 case in 2·28, or 43·8 p. c.

The following is an abstract of the cases of cardiac complication, and their result:—

1. Peri- and endocarditis present at the time of the patient's admission after being three weeks ill of an attack of rh. ac., in a male æt. 15. At the time of the patient's discharge, 23 days after, there still remained a slight prolongation of the first sound and some slight dullness.

2. Peri- and endocarditis, which came on the day before admission on the 11th or 12th day of a first attack of rh. ac., in a male æt. 25. Some dullness on percussion, and prolongation of the systolic sound still remained at the time of discharge on the 84th day.

3. Endocarditis present on admission on the eighth day of an attack of rh. ac., in a female æt. 21, and the signs had entirely disappeared at the time of discharge on the 33rd day.

4. Endocarditis present on admission on the eighth day of an attack of rh. ac., in a female æt. 20. Scarcely any remains on discharge on 29th day.

5. Endocarditis present on admission on the fifth day of a second attack of rh. s. ac., the first having occurred four or five years before, in a male æt. 19. The signs entirely gone at discharge on the 37th day.

6. Endocarditis commencing on admission after three weeks of an attack of rh. s. ac., there having been two previous

* In 2, and probably 3, of these cases, there was also old disease.
† In 3 of these cases, however, there was probably also old disease.

attacks in two months, in a male æt. 18. Slight prolongation of systolic sound at time of discharge on 41st day.

7. Endocarditis with old disease present on admission after two weeks of an attack of rh. s. ac., a previous attack having occurred five years before, in a male æt. 27. The signs remaining at discharge on the 25th day.

8. Peri- and endocarditis, and probably old disease, present on admission after having had symptoms of rh. s. ac. for 13 weeks. The patient a male æt. 16. A previous attack 18 months before, and the pericarditic signs came on 11 days after admission; and had entirely gone, but a systolic murmur remained at time of discharge, 111 days after.

9. Endocarditis on admission on fifth day of an attack of rh. ac., but previous attack four years before. The patient, a male æt. 18, had been constantly wet and cold, while at sea in the Baltic during a gale of wind, for three weeks. The signs remaining, probably, at discharge 77 days after.

10. Endocarditis and capillary bronchitis present on admission after three weeks of an attack of rh. ac., the patient having had an attack 18 months before, in a female æt. 21. Murmur slightly heard at discharge on 91st day.

11. Old disease in a male æt. 16, ill 20 months, worse two weeks. Rh. s. ac. Discharged in 125 days.

12. Pericarditis, pleuritis, and old disease, in a male æt. 41, suffering from cardiac symptoms for a year. Rh. ac. of 10 days' duration at time of admission, and, after being in the hospital, 7 days; there were found, on post-mortem examination, recent pericarditis, pleuritis, and bronchitis, with old aortic and mitral valvular disease. The heart weighed 21¼ oz. Av.

13. Endocarditis present on admission after a week's illness. Rh. s. ac. A previous attack three years before. Signs gone at discharge after 21 days. In a female æt. 20.

14. Endocarditis in a case of rh. s. ac., admitted after one month's illness, but ailing four years. The patient, a female æt. 18, had had a previous attack seven years before. The signs existed at the time of the patient's admission, and had entirely disappeared before her discharge on the 27th day.

15. Old disease, in a male æt. 22, suffering from symptoms of rh. s. ac. The patient had had three previous attacks in eight years. Discharged 72 days.

16. Endocarditis in a case of rh. s. ac., admitted after three weeks' illness. The patient, a female æt. 18, had had an attack three years before, but had been subject to palpita-

tion for six years. The signs existed at the time of admission, and had disappeared before discharge, and been replaced by an anæmic murmur. Duration of residence 50 days.

17. Endocarditis on admission. After a week's severe illness, during at attack of rh. s. ac., in a female æt. 21, who had had three previous attacks in seven years. Signs gone at discharge after 39 days.

18. Old disease, in a case of rh. s. ac., in a female æt. 17, who had had a previous attack three years before. The illness was of one month's duration at time of admission, and the signs remained at discharge after 63 days.

19. Old disease, in a case of rh. s. ac., in a female æt. 20, who had never had rheumatism before. The attack had existed for 15 months, and the symptoms had been more severe for five days. The cardiac disease might probably have originated in injury. The duration of residence was 53 days.

20. Old disease, in a case of rh. s. ac., in a female æt. 26, who had had several previous attacks. The illness was of six days' duration. The duration of residence was 49 days.

21. Endocarditis, in a case of rh. s. ac, in a male æt. 30. The signs were present on admission, on the third day. The patient had had two previous attacks in 12 years. The signs had probably disappeared at discharge on the 20th day.

22. Peri- and endocarditis and pleuritis. In an attack of rh. s. ac., present on admission after a week's illness, in a male æt. 31, who had had two previous attacks in 12 years. At discharge, after 15 days, the pericarditic signs had entirely disappeared; but a systolic murmur remained at the apex.

23. Endocarditis appearing two days after admission after two weeks' previous illness, in a case of rh. ac. in a male æt. 22, who had had no previous attack. The signs were very slightly heard 26 days after, and there was some prolongation of the first sound but no murmur at discharge 45 days after admission.

24. Endocarditis on admission, in a case of rh. s. ac. after one year's illness, and a previous attack four years before, in a female æt. 17. Signs remaining at discharge after 47 days.

25. Old disease. In a case of rh. s. ac., in a female æt. 22, admitted after six months' illness, but worse for three days. The patient had had palpitation for six years. Convalescent from rheumatic symptoms in 12 days; discharged in 36.

26. Endocarditis present on admission, in a case of rh. ac., admitted after three weeks' severe illness. A previous attack nine years before. Signs still remaining at discharge after 40 days. In a male æt. 29.

27. Endocarditis, commencing on admission, in a case of rh. ac., in a female æt. 17, who had had no previous attack. Admitted after three weeks. Convalescent in 39 days, and signs gone before discharge after 63 days.

28. Endocarditis and old disease in a male æt. 15, who had had no previous attack, but had been ill three months. Discharged 86 days—rh. s. ac.

29. Old disease, in a male æt. 15, labouring under rh. s. ac., who had had a previous attack two years before, and had been ill six months, and worse six days. Discharged after 28 days.

30. Old disease in a case of rh. s. ac. of eighteen months' duration, but worse two weeks. The patient was a male æt. 17, and remained in the hospital thirty-seven days.

31. Peri- and endocarditis and old disease in a male æt. 15, who laboured under rh. s. ac., of six months' duration, but had not had any previous attack. The signs remained at discharge, after eighty-three days.

32. Endocarditis and old disease in a male æt. 21, who laboured under rh. ac., and had had several previous attacks in nine years. The symptoms had existed a month at the time of admission, and the patient remained thirty-one days.

It thus appears that of the twenty-four cases in which there was recent disease, in six the disease assumed the form of peri- and endocarditis, and in all but one of these cases the symptoms were present at the time of the patients' admission into the hospital. In one case they came on eleven days after admission. In two, and perhaps three, of these cases there was also old disease, and in one the patient died; in the other two signs of old disease remained at discharge. In three other cases the pericarditic signs disappeared, but there remained slight evidences of valvular defect at discharge.

Of the cases of endocarditis, eighteen in number, three had also old disease; in twelve, in which there was only recent disease, the signs were present at the time of the patients' admission; in two the symptoms were commencing at that time, and in one they occurred two days after admission.

In the three cases in which there was also old disease the signs remained at discharge; in two of the other cases they also remained, and probably also in a third; and in four

they existed to a slight extent, while in six they had entirely disappeared, and in two had probably disappeared at the time of discharge. So that of the twenty-four cases, six and probably two others, making eight, were entirely cured; fifteen experienced more or less marked relief, and one patient died.

Of the cases in which recent or old cardiac complications existed, 32 in number, in 20 the patients are stated to have had one or more previous attacks of rheumatism; 2 are reported never previously to have suffered from rheumatism; and in 10 no mention is made of previous attacks, but probably in all these cases it may be concluded that enquiries had been made and answered in the negative.*

The other complications recorded as having occurred in this series of cases of rheumatism are—in two cases plumbism, in one capillary bronchitis, in one pleurisy, in two secondary syphilis, and in one an abscess in the neck. In two cases scarlatina occurred when the patient was beginning to be convalescent from rheumatism, and in one variola appeared under similar circumstances.

The duration of residence in the hospital of the whole of the cases, excepting that in which the patient died on the 7th day, was on the average 43·4 days.

The mean duration of residence of the cases unattended by cardiac complication was 37·3 days; the extreme periods being 14 (2) and 15 (2) days, and 60 and 87 days.

The mean duration of residence in the cases with cardiac complication was 51·9 days, the extremes being 21 and 25 days, and 91 and 111 days. In several of both series of cases the patients were, however, detained in the hospital for considerable periods after convalescence from rheumatism, in consequence of the occurrence of other complications.

Summary of the three sets of Cases.

			Ratio p. c.
Grand total, 146.	Males	78	53·4
	Females	68	46·5
Entirely free from cardiac complication		44	30·1
Having presented slight symptoms or signs or both		40	27·3
Free from serious complications		84	57·5
			or 1 case in 1·73
	Males	44	52·3
	Females	40	47·6

* In six cases the patients are reported to have had murmurs, regarded as anæmic, and in a seventh case a murmur existed which was also probably anæmic. Of these seven patients, six were females, the seventh being a boy fourteen years of age.

			Ratio p. c.
With cardiac complication, pericarditis, or peri- and endocarditis		16	10·95
			or 1 case in 9·1
Endocarditis		37	25·34
			or 1 case in 3·9
Recent cardiac complication		53	36·3
			or 1 case in 2·75
	Males	29	37·1
	Females	24	35·1
With old disease		9	6·1
	Males	5	
	Females	4	
With all forms of cardiac complication		62	42·4
			or 1 case in 2·3
Cases of acute rheumatism		54	36·9
	Males	22	40·7
	Females	32	59·2
Free from serious cardiac complication		33	61·1
			or 1 case in 1·62
	Males	14	63·6
	Females	19	59·3
With cardiac complication		21	38·8
			or 1 case in 2·57
Peri- and endocarditis		4	7·4
Endocarditis		17	31·48
	Males	8	36·3
	Females	13	40·6
Cases of subacute rheumatism		92	63·01
	Males	56	60·8
	Females	36	39·1
Without serious cardiac complication		51	54·5
			or 1 case in 1·8
	Males	30	53·5
	Females	21	58·3
With cardiac complication		32	34·7
			or 1 case in 2·8
Peri- and endocarditis		12	13·04
Endocarditis		20	21·73
	Males	21	37·5
	Females	11	30·5
With old cardiac disease		9	9·7
	Males	5	
	Females	4	
With all forms of cardiac complication		41	44·5

Of the whole of the cases, 39 are reported never to have previously had rheumatic fever; and 50 had had previous attacks; and it may be inferred that in most of the other cases, where there is no distinct statement, in several of which, however, the disease was of long duration before admission, enquiry was made, but failed to elicit any history of previous attacks. If this be correct, the proportion of the whole in which previous attacks had occurred was 34·2 p. c.

Of the cases in which recent cardiac complication occurred, 25 out of 52 are said to have had previous attacks of rheumatism, or 47·1 per cent., and in several in which the patient had not previously suffered from rheumatism, the actual attack was of long duration before the admission into the hospital.

Of the whole of the cases, in 44, or 83·01 per cent., the signs or symptoms or both, had occurred before the patients' admission, or were then commencing; and in 9 only, or 16·9 per cent., did they make their first appearance while the patients were actually under treatment. In several of the cases in which there was recent peri- or endocarditis or both there was also old disease.

The result in the recent cases of cardiac complication was as follows:—

In 18 cases the signs entirely disappeared; in 2 they probably disappeared, and in 2 the result was not reported, but the signs in these also probably disappeared, making 22 which may be regarded as having been cured; or 41·5 per cent.

In 29 cases, or 54·7 per cent., the signs are stated, or may be inferred, to have remained, in a more or less marked degree, at the time of the patients' discharge; these embracing several cases of old disease and others of long duration before admission.

In 2 cases, or 3·7 per cent., the patients died; in both these there being pericarditis and old cardiac disease, and in one, also, renal disease with other complications.

TABLE I. SHOWING THE KIND AND PROPORTION OF CARDIAC COMPLICATION IN ACUTE AND SUBACUTE CASES, IN THE TWO SEXES.

	Total	Free from Cardiac Complication			With recent Cardiac Complic.			Old Disease
		Total	Entirely free	With slight Symptoms or Signs, or both	Total	Peri- and E.-carditis	Endo-carditis	
ACUTE CASES.								
Males 22	54	14 = 63·6 p.c.			8 = 36·3 p.c.	4	17	
Females 32		19 = 59·3 „			13 = 40·6 „			
		33 = 61·1 „			21 = 38·8 „			
SUBACUTE CASES.								
Males 56	92	30 = 53·5 p.c.			21 = 37·5 p.c.	12	20	5
Females 36		21 = 58·3 „			11 = 30·5 „			4 = 9 = 9·7 p.c.
		51 = 54·5 „			32 = 34·7 „			
	146	84 = 57·5 p.c.	44	40	53 = 36·3 p.c.	16	37	

TABLE II. SHOWING THE PROPORTION OF RECENT AND OLD CARDIAC COMPLICATION AT DIFFERENT AGES AND IN THE TWO SEXES.

	Grand Total	Males	Females	Free from Serious Complication			With recent Cardiac Complication			With old Disease			Total Car. Com. of all kinds
				Total	Males	Females	Total	Males	Females	Total	Males	Females	
20 years and under	70	32	38	33	12	21	31	16	15	6	4	2	37
21 to 40 incl.	67	42	25	43	29	14	21	12	9	3	1	2	24
41 to 53 incl.	9	4	5*	8	3	5	1†	1	. .	. .	. .	. .	1
	146	78	68	54	44	40	53	29	24	9	5	4	62

Proportion of recent cardiac complication at all ages, 36·3 p.c.; of all kinds, 52·85 p.c.
" " " at 20 years of age and under, 44·28 p.c.; of all kinds, 35·82 p.c.
" " " from 21 to 40 years of age incl., 31·34 p.c.
" " " from 41 to 53 " " 11·11 "

General Results.

1. Of the whole of the 146 cases of acute and subacute rheumatism, only 84, or 57·5 per cent., or one case in 1·73, were free from serious cardiac complication; and of this number only 44, or 30·1 per cent., were entirely free from any signs or symptoms of heart affection, while in 40, or 27·3 per cent., there existed some slight signs or symptoms or both.

2. The number of cases in which some decided form of recent cardiac complication occurred was 53, or 36·3 per cent., or one case in 2·75; while in nine cases, or 6·1 per cent., there was old disease of the heart, making altogether 62 cases in which there was either old or recent cardiac complication, or 42·4 per cent., or one case in 2·3.

In this calculation the whole of the 84 cases referred to above are regarded as having been free from heart affection. If the six cases in which there were slight symptoms and signs be regarded as cases of cardiac complication, the total number of cases of recent heart affection becomes 59, or 40·4 per cent., or one case in 2·4; and the total cases of cardiac complication, old and recent, become 68, or 46·5 per cent., or one case in 2·1.

* Oldest 52. † Age 41.

3. The proportions of cardiac complication varied considerably in the three sets of cases, amounting in those treated at the Royal Free Hospital to 66·6 per cent., or one case in 1·5; while in the cases treated at St. Thomas's Hospital, London Bridge, it was only 30 per cent., or one case in 3·2. The cases treated at the Surrey Gardens were intermediate between the other two series, the heart affections amounting to 45·09 per cent., or one case in 2·2.

4. The proportion of all forms of recent cardiac complication did not materially differ in the acute and subacute forms of rheumatism. In the former the serious recent cardiac affections constituted 38·8 per cent., or one case in 2·57; in the latter they amounted to 34·7 per cent., or one case in 2·8; showing them to be more common in the acute than in the subacute cases, but indicating only a slight difference.

5. When, however, the different kinds of cardiac complication in the acute and subacute forms of rheumatism are compared separately, there is a marked difference in their relative frequency. Thus while the proportion of pericarditis and of peri- and endocarditis in the whole of the cases was 10·95 per cent., and of endocarditis only 25·34 per cent.; in the acute cases the proportion of pericarditis and of peri- and endocarditis was 7·4 per cent., and of endocarditis only 31·48 per cent., and in the subacute cases the proportion of pericarditis and of peri- and endocarditis was 13·04 per cent., and of endocarditis 21·73 per cent. Thus showing that pericarditis is of more common occurrence in the cases of slighter rheumatism, and endocarditis in those of greater intensity; an inference which is entirely in accordance with clinical experience, pericarditis being often developed in cases in which the general and local rheumatic symptoms are only slightly marked, while the liability to endocarditis increases with the intensity of the rheumatic symptoms.

6. The proportion of cases in which pericarditis or peri- and endocarditis occurred was 10·95 per cent., or one case in 9·1, and that in which endocarditis only occurred was 25·34 per cent., or one case in 3·9, the proportion of the cases of pericarditis being to those of endocarditis only as 1 to 2·3.

7. There was not any marked distinction between the frequency of recent cardiac complication in the two sexes. The proportion of all forms of cardiac affection was in males 37·1 per cent., and in females 35·1 per cent., and the results were nearly the same when the frequency of cardiac compli-

cation in acute and subacute cases separately is compared, in males the percentage being 36·3 and 40·6, and in females 37·5 and 30·5, per cent.

8. Recent cardiac affections are, however, much more common in persons in early life than in older persons. Thus, at 20 years of age and under the proportion of all forms of recent cardiac complication was 44·28 per cent., while in persons from 21 to 40 years of age inclusive the proportion was 31·34 per cent., and from 41 to 53 years 11·11 per cent. The oldest person in whom recent cardiac affection occurred was a man 41 years of age.

If the cases of old disease be included in the calculation, the proportion of cardiac affections at the earliest period is still greater, or 52·88 per cent., and at the second period 32·82 per cent.

9. A large proportion of the patients who suffered from both forms of rheumatism had had previous attacks of the disease before that for which they came under treatment; and this proportion was still more considerable in the cases in which there were cardiac complications, both old and recent. Of the whole of the cases 34·2 per cent. had had previous attacks; while in the patients who had cardiac complications the proportion of previous attacks was 47·1 per cent.

10. In by far the larger number of cases in which recent cardiac complication occurred, the symptoms or signs or both were either commencing or actually present at the time of the patients' admission into the hospital. Thus of the 53 cases, in 44, or 83·01 per cent., the complications then existed, while in only nine, or 16·9 per cent., did they make their appearance while the patient was under treatment. To this number may probably be added some of those in which slight signs or symptoms or the two combined were observed; for in some of these, and certainly in the six cases of the latter class, it may be inferred that the further development of the cardiac affection was prevented by the treatment pursued.

11. The result in the cases of recent cardiac complication depended very much upon the period at which the patients came under treatment for the rheumatic symptoms, and upon the time which had elapsed after the heart symptoms had made their appearance. In the cases in which the rheumatism was only of short duration at the time of the patients' admission, and when the cardiac affection was very slightly marked at that time or arose during the course of treatment, the evidences of disease generally wholly disappeared before

the patients' discharge. When, on the contrary, the rheumatic symptoms had been of long duration before the patients' admission, and the heart complications were then fully established, they remained, in a more or less marked degree, at the time of discharge; and such was of course also the result in the cases in which there was both old and recent disease.

The proportion of cases of recent cardiac complication entirely cured was 41·5 per cent.; of those which sustained only partial relief (this including some cases in which there was also old disease) 54·7 per cent.; and of those in which the attack proved fatal 3·7 per cent. In the fatal cases, two in number, there was in both pericarditis and old valvular disease with pneumonia and pleuritis, and in one case renal disease.

12. The subsidence of the rheumatic symptoms was followed in several cases by the appearance and gradual development of anæmic murmurs at the base of the heart, and especially in the course of the pulmonary artery, accompanied often by murmurs in the arteries and veins of the neck. These murmurs were heard in cases in which there were no evidences of cardiac complication in some cases, but in others they succeeded to endocarditic murmurs. In nine out of ten cases in which they are specially mentioned in the reports they were heard in females, and in the tenth the patient was a delicate boy æt. 14.

They usually increased in intensity for a few days, and then gradually subsided, disappearing entirely before the patients' discharge. If at their period of greatest intensity it was not always easy or possible to decide as to their precise seat, it became quite clear, as they subsided, that they were developed at the pulmonary orifice or in the course of the pulmonary artery.

Note in reference to the frequency of Cardiac Complications in Cases of Acute and Subacute Rheumatism.

The proportion of cardiac complications which is shown to have occurred in these series of cases of rheumatic fever is very large, and will probably be thought greater than that which usually obtains by those who have never subjected the cases they have treated to a careful statistical analysis. It is not, however, materially different from the results which

have been arrived at by various other physicians after careful observation and calculation. Dr. Fuller,* in his work on rheumatism, has devoted much attention to this branch of the subject, and has collected various observations of his own and from the writings of others to illustrate it. Thus he shows that of 379 cases of acute and subacute rheumatism treated by the physicians of St. George's Hospital under his own observation, 139 may be inferred to have had some form of recent cardiac complication, or 36·6 per cent., or one case in 2·72 cases, and 48 to have had some form of old-standing heart disease, or 12·6 per cent., or one case in 7·89, making a total of 187 cases of old or recent cardiac complication or 49·3 per cent., or one case in 2·02. This is almost precisely the proportion of recent cardiac complication here deduced, but shows a larger proportion of cases of old-standing disease. I think it probable that some of my own cases of old cardiac disease complicated by rheumatism may, when the rheumatic symptoms were only slight, have escaped enumeration among the rheumatic cases.

Dr. Barclay, in a paper in the 'Medical-Chirurgical Transactions,'† states that of 152 cases of acute rheumatism treated at St. George's Hospital, there occurred 67 cases of peri- and endocarditis and old disease, or 44·1 per cent., or 1 case in 2·2, and 21 cases of doubtful cardiac complication, or 13·8 per cent.; or, taking the two together, 57·8 per cent., or 1 case in 1·7; while of 178 cases of subacute rheumatism 20 presented some form of cardiac complication, or 11·2 per cent., or 1 case in 8·9. The total proportion of cardiac complication in all the cases of acute and subacute rheumatism was therefore 32·7 per cent., or 1 case in 3, and, including the doubtful cases, 39 per cent., or 1 case in 2·5.

Dr. Fuller has also given a table of the proportion of cardiac complications in 588 cases, some of them collected by himself at St. George's Hospital, and others by Dr. Budd, Dr. Latham, Dr. Taylor, and M. Bouillaud, showing that the proportion of cardiac affection varied in the practice of these different physicians from 57·01 per cent., or 1 case in 1·71, in the cases recorded by M. Bouillaud, to 48·03 per cent., or 1 case in 2·06, in the cases treated at St. George's Hospital; the mean of the cases being 52·04 per cent., or 1 case in 1·91.

* 'Rheumatism, Rheumatic Gout, and Sciatica,' 3rd ed., 1860, p. 257.

† Vol. xxxv. 1852, p. 1.

In my own observations the proportion of cardiac complications is only slightly greater in the acute than in the subacute cases; and, if to the whole series the six doubtful cases be added, the result is still below the proportion thus inferred by Dr. Fuller as obtaining in acute rheumatism only.

In a recent report of the London Hospital,* it is stated that of the patients admitted with the rheumatic fever, nearly 90 per cent. had already acquired cardiac mischief from previous attacks or before admission. In 5 per cent. cardiac complication occurred while the patients were under treatment, and 5 per cent. remained free.

The proportion of the cases of pericarditis and of peri- and endocarditis in my observations is less than that given by Dr. Fuller from the cases treated at St. George's Hospital, and deduced from the other statistics which he has collected. This may be in part due to the care exercised by myself that only those cases should be reported as instances of pericarditis which had presented characteristic signs of exocardial mischief. It is quite possible that some cases in which the signs were doubtful may have been numbered with the cases of endocarditis only.

The difference in the proportion of cardiac affections in the cases treated at the Royal Free Hospital, at St. Thomas's Hospital at London Bridge, and at the same institution at the Surrey Gardens, cannot be explained by differences in the course of treatment pursued. It is true that in the first series of cases the most common treatment was with salines and colchicum, and in the last the more purely alkaline remedies were used; but there was no constant rule of this kind followed; and had there been, as in by far the largest number of cases the cardiac affections had already commenced before the patients came under treatment, the comparative frequency of cardiac complications in the different series could not be so explained.

The larger proportion of heart affection in the cases treated at the Royal Free Hospital was indeed doubtless due to the severity of the cases, and the long period which had often elapsed before they came under treatment. During the time that most of the cases treated at London Bridge were collected, a selection of the cases applying for admission was made; certain cases, and these the more severe and typical, and therefore the more likely to be complicated, being placed in

* 'Clinical Lectures and Reports,' vol. ii. 1865.

the clinical ward for purposes of tuition; while the remainder were distributed over the ordinary wards; a plan which would obviously tend to lessen the proportion of severe cases in the latter, in which my observations were collected. The cases treated at the Surrey Gardens are chiefly such as arise in the neighbourhood, and, being admitted daily and without any special selection, doubtless afford a fair average for analysis.

INDEX.

Acupressure, influence on inflammation, 61
Alpine climate in cases of Hæmoptysis, 143
Ammonium, Bromide of, in Chorea, 73
Amputation for gun-shot wound, 43
Aneurism, Subclavian, case of, 8
Anæmia, treatment of, 122
Apomorphia, action of, 166
Artery, Brachial, acupressed for suppuration of the hand, 61
Artery, Femoral, ligature of the, 5, 37
Ascites treated successfully with tonics, 12
Asynergy, Motor, 127

Bäumler, Dr., on cases of Hæmoptysis, 83
Bowel, puncture of, to relieve distension, 64
Bristowe, Dr., treatment of Ascites with tonics, 12
Broadbent, Dr., on the treatment of Anæmia, 122
Bromide of Potassium in Chorea, 69
Bruce, Mr., on Tracheotomy for Laryngitis, 39
Buzzard, Dr., a case of acute Rheumatism, 77
„ report on case of Motor Asynergy, 127

Calabar Bean in Tetanus, 100
Callender, Mr., for Mr. Crouch, a case of gun-shot wound, 43
„ report on case of Chylous discharge from leg, 112
Chancres, identity of hard and soft, 160
Cholera simulated by gastro-enteritis, 178
Cholera, saline injections in, 174
Cholmeley, Dr., case of lymphatic Engorgement, 116
Chorea complicating pregnancy, 73
„ treatment of, 69
Chylous fluid, discharge of, from leg, 104, 116
Coote, Mr. Holmes, on a case of Syphilis, 157
Crouch, Mr., case of amputation for gun-shot wound, 43

Davis, Dr. Hall, on the treatment of Chorea, 73
Day, Dr., case of chylous discharge from leg, 104
Diabetes Mellitus treated by opium, 44
„ treatment of, by Opium, 163
Diarrhœa, fatty, 119
Diet in a case of Diabetes Mellitus, 44
Down, Dr. Langdon, case of fatty Diarrhœa, 119
Duffin, Dr., on Syphilitic Rheumatism, 81

Enlargement of leg and thigh, 104, 116
Epileptic, acute Rheumatism in an, 77
Epithelioma supervening on Ichthyosis Glossæ, 2

Femoral Artery, ligature of the, 5, 37

Gastro-enteritis simulating Cholera, 178
Gee, Dr., on the action of Apomorphia, 166
Glossitis, case of sub-, 140
Glottis, Tracheotomy for spasm of, 39
Green, Dr., on Irritative Hypertrophy of the Heart, 56
Greenhow, Dr. Headlam, case of Motor Asynergy, 127
„ „ on the treatment of Chorea, 69
Gun-shot wound, amputation for, 43

Heart affected in Rheumatism, 77
Heart disease with acute Rheumatism, 195
Heart, irritative Hypertrophy of the, 56
Heath, Mr., on a case of Subclavian Aneurism, 8
Hill, Mr. Berkeley, a case of Varicose Lymphatics, 114
Hinton, Mr., on removal of a tumour from the Tympanum, 75
Hæmoptysis as a cause of Phthisis, 143
„ cases of, 83, 143
Holmes, Mr., case of Lithotomy, 67
Holthouse, Mr. Carsten, case of Tetanus after wound of knee-joint, 94
„ „ case of Sub-glossitis, 140
Hulke, Mr., on Ichthyosis Glossæ, 1
Hypertrophy, irritative, of heart, 56

Ichthyosis Glossæ, 1
Intestine, treatment in rupture of, 64
Iodide of Potassium in Chorea, 69

Joint, knee, wound of, 94
Joint, knee, inflamed, ligature of Femoral Artery, 37

Knee-joint, inflamed, ligature of Femoral Artery, 37

Laryngitis, acute, 39
Lithotomy, case of, 67
Little, Mr., case of ligature of Femoral Artery for inflamed knee, 37
Lung contracted with Phthisis, 181
Lymphatics, Varicose, 114

Mackenzie, Dr. Morell, case of Trachea displaced by external pressure, 163
Manganese in Anæmia, 122
Maunder, Mr., for Mr. Little, ligature of Femoral Artery for inflamed knee, 37
„ on ligature of the Femoral Artery (under two conditions), 5
Moore, Mr., on treatment of Suppuration by Acupressure, 61
Motor Asynergy, 127
Moxon, Dr., report on case of Motor Asynergy, 127
Murchison, Dr., on Gastro-enteritis simulating Cholera, 178
„ Saline injections in Cholera, 174
Myers, Mr., on a case of Syphilis, 160

Nickel in Anæmia, 122

Opium in Tetanus, 100
„ the treatment of Diabetes, 44, 163

Paget, Mr., on a case of Suppression of Urine, 170
Pancreatic extract in a case of fatty Diarrhœa, 119
Pavy, Dr., case of Diabetes successfully treated with opium, 44
Peacock, Dr., on acute Rheumatism with Heart disease, 195
Phthisis, cases of, 181
Potash, Arsenite of, in Chorea, 73
Powell, Dr., cases of Phthisis with contracted lung, 181
Pressure, external, displacing the Trachea, 169

Report on case of enlargement of right leg and thigh, 112
„ „ Motor Asynergy, 135

Rheumatism, Acute, 195
„ „ in an Epileptic, 77
„ Syphilitic, 81

Saline injections in Cholera, 174
Sanderson, Dr., report on case of chylous discharge from leg, 112
„ on the treatment of Diabetes with opium, 163
Smith, Mr. T., on puncture of bowel to relieve distension, 64
Subclavian Aneurism, case of, 8
Sub-Glossitis, case of, 140
Suppression of urine, case of, 170
Suppuration, influence of Acupressure on, 61
Syphilis, a case of, 157
„ identity of hard and soft Chancres, 160
Syphilitic Rheumatism, 81

Temperature in certain cases of Hæmoptysis, 83
„ of saline injections in Cholera, 174
„ in syphilitic Rheumatism, 81
Tetanus, cases of, 94, 100
„ treated with Calabar Bean, 100
Tonics in the treatment of Ascites, 12
Trachea displaced by pressure, 163
Tracheotomy for acute Laryngitis, 39
Treatment of Anæmia, 122
„ opium, in diabetes, 163
„ of Hæmoptysis, 143
„ of fatty Diarrhœa, 119
„ saline injections in Cholera, 174
Tumour, removal of, from Tympanum, 75
Tympanum, removal of tumour from, 75

Urine, case of Suppression of, 170

Varicose Lymphatics, 114
Veins, saline injections in Cholera into the, 174

Weber, Dr. Hermann, on Hæmoptysis, 143

Zinc in Anæmia, 122

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